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TWELVE MONTHS OF ABDOMINAL AND VAGINAL SECTION.*

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GENTLEMEN: I have chosen to lay before you on this occasion an abstract of my work in abdominal and vaginal section during the year in which I have served you as president. As a detailed report of forty-eight cases would take up too much of your time, I have furnished each of you with a statistical table of them for your inspection, and my remarks will be chiefly of a critical and explanatory nature.

First, as to the percentage of deaths: A death-rate of 17 per centum can not be considered an unusually large one for operations in which the abdominal cavity is opened for all sorts of pelvic growths as they are met with in gynæcologic practice, including malignant and almost hopeless cases. Yet this mortality is above twice what it ought to have been in this series, or ought to be in almost any such series.

The two deaths from hæmorrhage should not have occurred. I suppose that almost every laparatomist of any experience has lost one or two patients from hæmorrhage, and has needed one or both of these accidents to teach him how to tie the pedicle. And until this shall be adequately taught somewhere, I suppose that almost every coming laparotomist will lose a patient or two in this manner.

The teaching that the pedicle should always be transfixed has diminished the frequency of hæmorrhage, but has not prevented its occurrence. The kind of knot cannot be made to solve the question, for hæmorrhage has occurred with all kinds of knots. In both of my cases of death from hæmorrhage I followed the directions usually given in the books and employed in practice, and I attribute the death of one, if not both, to my faithfulness in following out such advice. I transfixed the pedicle in a non-vascular place, and, although I tied as tightly as I could, my patient was almost pulseless from internal hæmorrhage four hours afterward.

I will substantiate the position taken by a few quotations. First, from Heger and Kaltenbach (Operative Gynakologie, third ed., 1880, p. 273): "The pedicle, held between two fingers, should be transfixed at a *non-vascular** place, ... a double thread drawn through and each *half* of the pedicle tied by itself, without crossing the threads. . . . The threads, at the tying of the first knots are always put through twice (surgical knot), and drawn with a gradually increasing force until they have made a deep and permanent furrow; thereupon, a second, and even a third, knot is tied. Below the partial ligatures we always put a ligature about the whole pedicle."

* Presidential address delivered at the annual meeting of the Gynæcological Society of Chicago, October 19, 1888.

* Italics in these quotations are mine.

Next from Olshausen (Handbuch der Frauenkrankheiten, Billroth & Lueke, 1886, vol. ii., p. 544): "It is generally accepted that thick pedicles must be tied in two, three, or, exceptionally, four portions. With the ordinary and quite efficient division in two *halves*, one separates the tissues in the *middle*, thinnest portion at a *non-vascular* place. . . . In the *half* on one side lies the tube; in the other, the ovarian ligament." The following is Greig Smith's description (Abdominal Surgery, 1887, p. 167): "The ligature is placed double by transfixing with a blunt needle. The inner pedicle contains the utero-ovarian ligament, the Fallopian tube somewhere near its isthmus, the spermatic artery and its veins, and the small branch which accompanies the Fallopian tube. The outer ligature lies at the retiring angle where the infundibulo-pelvic and infradibulo-ovarian ligaments meet, takes its *half* of the mesovarium, and also constricts the spermatic artery."

It will be noticed in these quotations that the pedicle is usually to be tied in *halves* and transfixed in a *non-vascular* point, which is generally a weak one. In both of my fatal cases I transfixed through a non-vascular portion, and in the one case (ovariotomy), I drew upon the silk as tightly as I could, while in the other (oöphorectomy), I used Tait's knot, and thought I got it as tight as possible. I opened the abdomen before death in both cases and found that the pedicle of the ovarian tumor had partly slipped out of the ligature, and that the other had not been sufficiently secured.

I now use the following method, with a view to avoiding such accidents, and have not found it wanting in safety: I hold the pedicle between the thumb and forefinger of the left hand so that the Fallopian tube, well drawn out, lies on the same side with (and against) the ovarian ligament. The mesovarium lies against the mesosalpinx. I pass the double-threaded needle with one thrust through the inner or mesenteric edges of both the Fallopian tube and ovarian ligament, thus getting the ligatures fixed at two firm points. I then hand the pedicle to an assistant and tie the tube and ovarian ligament with one of the threads, and the remainder of the pedicle, which is much more than *half*, with the other; and then the whole pedicle *en masse* with one of the same threads, preferably the one first tied. While drawing the ligatures tight with the first or surgical knot of each ligature, I keep on pulling at the knot while the traction upon the pedicle is relaxed by the assistant. This is necessary to secure complete collapse and permanent constriction of the tissues. When the pedicle is unusually short and inelastic I transfix, as just stated, but, in addition, carry both threads before tying through a fold of the pedicle at the side opposite the Fallopian tube and ovarian ligament, and thus have a hold at three peripheral points of the pedicle, and am insured against slipping of the ligature. To get a firm hold for the ligature, which is inconsistent with tying the pedicle in *halves*, and to relax the pedicle while tying, so that it may be made to collapse completely, are, it seems to me, points that can not be neglected with safety in any case, and which ought to be more fully explained in the books. Fleshy pedicles must, of course, be ligated in small portions, and are not referred to in what I said above.

The death from heart-failure (exploratory excision) ought not to have occurred, for either I ought not to have operated, or, having done so, should have pushed stimulants, nourishment, massage, etc., more vigorously. At present, whenever, after the first two or three days' fasting, the pulse becomes soft and compressible, I give some stimulants, particularly between the hours of 2 and 8 a. m., at which time the temperature is lowest and the circulation feeblest. Rectal alimentation is, of course, employed, but is always used with care for fear of inducing rectal irritation.

The two deaths from abdominal hysterectomy occurred in patients who should not

have been operated upon, because the condition proved to be such that recovery after an operation was impossible. Yet, as they were both doomed to a speedy, painful death if left without interference, and were anxious for an operation, I could not see my way clear to refusing them what seemed a last chance. It is also certain that the other fatal ovariotomy ought not to have been performed, since cancerous deposits existed elsewhere than in the ovary. Let us hope that in the future, either cases like these three will be operated upon sooner, or an increased experience will enable us to diagnose more completely and determine with greater accuracy just when it becomes our duty to abandon the patient to her disease.

Had I known how to tie a pedicle, and had I known better how to select my cases, six of these seven deaths would not have occurred, and the mortality for the series would have been less than 3 per centum. But it is, of course, unjustifiable and cowardly for a surgeon to reject all unpromising cases, when he knows that they must speedily die if not relieved by an operation.

It will be seen that all of the deaths took place among the twenty-seven abdominal sections, and none among the twenty-one vaginal sections.

In preparing the patients for the operations I usually give five or six grains of blue-mass on the second night before, and follow it in the morning by a saline aperient. The mercurial leaves the secretions in a more healthy state than other laxatives, and better promotes absorbtion of the gases. Unless that works too thoroughly, an enema is given the evening before the operation, of two ounces of glycerine with four of water, and a plain water-enema on the morning of the operation. From one to two ounces of brandy or whisky are given half an hour before the anæsthetic is administered. I prefer cloroform, but use ether because of the difficulty in getting an assistant who is accustomed to use the former.

In the after-treatment no morphine is given, except for diarrhœa, or occasionally one dose immediately after the operation, for excessive nausea or restlessness. Pain, due to intestinal peristalsis, is treated by aromatics, the rectal tube, and the glycerine-and-water enema.

Vomiting after the operation, even though it continue for two or three days, is not considered as of serious consequence. But secondary vomiting, commencing gently after the first has subsided, with regurgitation at pretty regular intervals and gradually increasing in severity, is regarded as the forerunner of intestestinal obstruction or paralysis, or possibly of peritonitis. I then make haste to administer a saline aperient before the nausea becomes so severe as to prevent its retention. One drachm of the granular effervescing citrate of magnesia is given every hour until flatus or feces pass the anus, or until its action can be felt in the bowels by the patient. After this has occurred, or if it does not occur after ten or twelve drachms have been retained, the usual glycerine enema is given, and repeated, if neccessary, with the addition of a drachm of spirits of turpentine. In case the saline aperient produces much pain it is discontinued and the enemas relied upon exclusively. When intestinal gases commence to pass off without the aid of the rectal tube, I consider the danger of intestinal obstruction or paralysis over for the time, and wait for other symptoms, or until near the end of the first week, before further disturbing the bowels. The effect of the magnesia should be to increase the comfort of the patient and diminish her pain; if it does not do so, it is not, as a rule, indicated.

In operating, I usually try to obtain as thorough asepsis as practicable, but, as a rule, do not consider its perfect attainment possible. I endeavor to operate so that my patient will recover, even if some of the ordinary septic germs of the atmosphere be introduced into the abdominal cavity, and seldom feel certain of completely excluding

them, except in simplest cases with small incisions. The part of the peritoneum with which I consider it most dangerous to deal is that which covers the intestines. I touch them only when absolutely necessary, and keep them as nearly constantly out of view or exposure to the air, by a covering of omentum, sponge, or aseptic cloth, as possible. I think the chances for recovery in any given properly performed abdominal or vaginal section will be bad almost in proportion as the intestinal coverings are injured or exposed to the air.

Finally, gentlemen, I will close with remarking that the way of the laparotomist, like that of the transgressor, is hard. The lot of the ideal antiseptist is unusually so, especially if he have that fear of sepsis that goes with the so-called aseptic conscience. At a recent abdominal section I had to make a large incision and spend some time in an attempt to control hæmorrhage in the pelvis. About the time I had got the abdominal cavity open an invited guest came in, stating that, through a mistake of the messenger, he had just received my invitation and had started for the hospital immediately. He was, of course, unprepared. When I called for ligatures he, considering himself an assistant, made a grab for them. I had him put them down, and gave him a short lecture. Yet in a few minutes he had his hand upon the edge of the incision, holding an instrument. After the operation I found among my instruments a pair of hæmostatic forceps, which he had taken out of his pocket-case after I had used my last one. Upon leaving he informed me that the case had been an instructive one to him, and, although the patient got well without a bad symptom, it was also an instructive one to me.

Abdominal Sections for the Removal of Ovarian Tumors.

No.	Name, and Date.	Age.	Married or Single.	No. of Children.	No. of Tappings.	Size and Nature of Tumor.	One or both Ovaries.	Adhesions.	Treatment of Pedicle.	Drainage.	Complications.	Hospital or Private.	Result.	Reported Elsewhere.	Remarks.
1	Mrs. P—th. July 14, 1887.	40	M	Multi-para.	1 for ascites	Carcinoma of right ovary size of man's head, cyst of left ovary size of fist.	Both	Extensive, to right abdominal wall	Tied with silk and dropped	Yes, long rubber tube	Ascites.....	St. Luke's Hospital	D. in 10 hrs	No	Died of shock and exhaustion.
2	Mrs. Tho—s. Aug. 30, 1887.	27	M	4	0	Dermoid cyst, size of large goose egg.	Both	No	Tied with silk and dropped	No	Fibro-myoma of fundus uteri, size of small orange.	Woman's Hospital	R	No	Uneventful recovery.
3	Mrs. W—sh. Nov. 19, 1887.	48	M	Multi-para.	0	Monocyst, size of man's head, filled with chocolate-colored fluid.	One	Extensive omental	Tied with silk and dropped	No	Adherent, omentum indurated, size and shape of hand	St. Luke's Hospital	R	No	Removed thickened omentum after a multiple juniper catgut ligature.
4	Mrs. —. Jan. 11, 1888.	40	M	0	0	Monocyst, containing 3 pints.	One, right	No	Tied with silk and dropped	No	Urethritis, cystitis, insanity.	St. Luke's Hospital	R	No	Got up at beginning of 5th day, changed nightgown, put on skirt, and was found at the door twenty feet away. Next day temperature 98 2-5 to 99° Fahr. Got up again on 10th day. Recovery rapid and uninterrupted.
5	Mrs. P—s. Jan. 31, 1888.	23	M	Twins.	0	Polycyst, larger than a man's head	One, left	Slight	Tied with silk and dropped	No	Hæmorrhage from pedicle.	St. Luke's Hospital	D. in 27 hrs	No	Died of hæmorrhage. Opened abdomen about six hours after and found that the ligature had slipped. Abdominal cavity full of blood. Sewed up broad ligament. Transfusion of saline sol. and afterward of blood.
6	Mrs. S—l. May 29, 1888.	28	M	2	0	Dermoid cyst, size of woman's head.	Both	No	Tied with silk and dropped	Yes, for 3 days, glass tube	Metritis.....	Woman's Hospital	R	No	Escape of fluid from tumor into incision. Washed out abdomen with warm water. Smooth recovery.

Vaginal Sections for the Removal of Ovarian Tumors.

No.	Name, and Date.	Age.	Married or Single.	No. of Children.	Size and Nature of Tumor.	One or Both Ovaries.	Adhesions.	Treatment of Pedicle.	Drainage.	Complications.	Hospital or Private.	Result.	Reported Elsewhere.	Remarks.
1	Mrs. M—m. Aug. 29, 1887.	40	M	8	Monocyst size of small egg — long pedicle.	Both	None	Tied and dropped.	Yes, 24 hours	Menorrhagia, retroversion, invalidism.	St. Luke's Hospital	R	Am. Journal Obst. April, 1888	Tamponed uterus in position for 2 days. Cured retroversion and symptoms.
2	Miss R—e. Oct. 2, 1887.	24	S	0	Dermoid cyst size of walnut, right.	Both	Uterus and appendages matted together.	Tied and dropped.	Yes, 40 hours	Left pyo-salpinx. Patient bedridden	Woman's Hospital	R	Am. Journal of Obst., April, 1888, 9, v.	Abscess developed in the 4th week and discharged into vagina and rectum. Is now improving in health, is menstruating.

Abdominal Section for Removal of Uterine Appendages not the Seat of Tumor

No.	Name, and Date of Operation.	Age	Married or Single.	No. of Children.	Pathological Condition or Symptoms necessitating Operation.	Duration of Disease.	What Removed.	Adhesions.	Treatment of Pedicle.	Drainage.	Hospital or Private.	Recovery or Death.	Complications before or after Operation.	Elsewhere Reported.	Remarks—Effect of Operation upon condition requiring it.
1	Miss McL. July 21, 1887.	24	S	.....	Hystero-epilepsy. Follicular enlargement of both ovaries (slight).	.....	Both ovaries, with tubes	No	Tied and dropped	No	Woman's Hospital	R	None	No	Troubled since operation with dark, offensive discharge from the uterus. Symptoms were relieved for a time, but since as bad as ever at times, and better at times.
2	Mrs. A. R. R—ll Aug. 10, 1887.	23	M	1 child, 1 misc. at 6 mo.	Small fibroid of fundus uteri. Epilepsy, numerous severe fits daily, near menstrual period.	Several years	Both ovaries, with tubes	No	Tied and dropped	No	Woman's Hospital	R	Pelvic hematocele size of large orange, 3 weeks after operation produced by eating bananas; absorbed in 3½ months.	No	Epilepsy cured for a few weeks, then returned; but not as bad as before operation, and is now improving.
3	Mrs. McK—a. Aug. 11, 1887.	36	W	Three	Periodic hysterical mania, worse at menstrual periods. Enlarged ovaries.	Seven years	Both ovaries, with tubes	No	Tied and dropped	No	Woman's Hospital	R	Retroplacement and anteflexion of uterus.	No	Complete cure to date. Had two slight attacks soon after operation—none since. In good health.
4	Mrs. Kr—r. Aug. 29, 1887.	19	S	.....	Chronic interstitial ovaritis and enlargement. Pain. (See remarks).	Six years, since first menstrual period	Both ovaries, with tubes	No	Tied and dropped	No	St. Luke's Hospital	R	Premature menopause. Patient plethoric	Chicago Medical Society, 1887	Complete cure. Ovaries nearly four times natural size and each converted into a multitude of cysts size of peas, none of which projected from the surface.
5	Mrs. S—nd. Sept. 8, 1887.	19	W	One, a year before	L. hæmato-salpinx. Both ovaries about 4 times normal size and inflamed.	One year	Both ovaries, with tubes	Extensive, on both sides.	Tied and dropped	No	St. Luke's Hospital	R	Slight attack of phlebitis (r) following operation. Defecation painful for 2 months after. Cervical stenosis from anteflexion, with uterine colic.	No	Condition originated in puerperal septicæmia. Now in fair health and improving, but has a small, tender lump on right broad ligament.
6	Miss Fr—ll. Sept. 26, 1887.	19	S	.....	Ovaritis of long standing. Unimproved by p'longed treatment.	Uncertain	Right ovary and tube	No	Tait's knot	No	St. Luke's Hospital	D. in 36 hours	Hæmorrhage from pedicle.	No	Abdominal cavity opened 19 hours after operation, after transfusion of nearly Oil of saline fluid, and found ligature partly off of stump, abdominal cavity full of blood-clots.
7	Mrs. L—n. Oct. 6, 1887.	51	M	Multip.	Cyst of right broad ligament. Invalidism unimproved by treatment. Small cyst projecting f'm surface of left ovary	Several years	Left ovary and tube	Cyst on left ovary firmly adherent, causing free bleeding.	Tied and dropped	Glass tube for 24 h'rs, iodoform gauze 48 hours longer	St. Luke's Hospital	R	None	No	Patient slightly improved. Drew the fluid from cyst of broad ligament by aspiration per vaginam Nov. 7. 1887, at the place of its projection over the cul de sac. Abdominal walls were so very fat that a large abdominal incision would have been necessary even to aspirate the cyst from above. Intestines full and tense.

ABDOMINAL SECTION FOR REMOVAL OF UTERINE APPENDAGES NOT THE SEAT OF TUMOR—Concluded.

No.	Name, and Date of Operation.	Age.	Married or Single.	No. of Children.	Pathological Condition or Symptoms necessitating Operation.	Duration of Disease.	What removed.	Adhesions.	Treatment of Pedicle.	Drainage.	Hospital or Private.	Recovery or Death.	Complications before or after Operation.	Elsewhere reported.	Remarks—Effect of Operation upon condition requiring it.
8	Mrs. S—dy. Oct. 14, 1887.	37	Wid.	0	Left hydrosalpinx. Enlarged cystic ovaries, chronic invalidism, unimproved by treatment.	14 years	Both ovaries with tubes.	No	Tied and dropped.	No	Woman's Hospital.	R	Small hernia followed but gives no trouble. Endometritis before operation.	Chicago Gyn. Soc., Nov. 18, 1887.	Slow improvement after operation.
9	Mrs. K—n. Dec. 19, 1887.	22	M	0	Enlarged cystic ovaries. Interstitial salpingitis. Distension of veins of right broad ligament. Excruciating dysmenorrhœa.	2½ years	Both ovaries with tubes.	Universal and firm.	Tied and dropped.	Yes, glass tube.	Woman's Hospital.	D. in 3¼ days.	Persistent bloody oozing from drainage tube. Obstruction of bowels.	No	Death caused by obstruction of bowels with pelvic peritonitis. Highest temp. during first 3 days, 101 2-5° F.; before death, 102 2-5°.
10	Ellen A—n. Jan. 4, 1888.	24	S	... .	Congenital anteflexion. Incurable dysmenorrhœa. Slightest dilatation followed by inflammatory reaction.	Since first menstrual period	Both ovaries with tubes.	No	Tied and dropped.	Yes, glass tube.	St. Luke's Hospital.	R	Losing mental power; acquiring opium habit. Becoming fast a physical wreck.	No	Recovery is complete. Now supports her aged mother.
11	Kate B—e. Jan. 16, 1888.	24	S	.....	Epilepsy at or near menstrual periods. Loss of mental power, slight cystic enlargement of L. ovary.	2½ years	Both ovaries with tubes.	No	Tied and dropped.	No	St. Luke's Hospital.	R	Epilepsy so far cured. Has an exudate size of end of thumb about right stump, preventing her from working.	No	Has menstruated regularly for past 3 months. Still complains of mental weakness, kept up perhaps by irritation about right stump.
12	Mrs. J—n. Jan. 22, 1888	23	M	1 Premature.	Double ovaritis and salpingitis, with recurrent acute attack. Right hematosalpinx.	Since birth of child	Both ovaries with tubes.	Extensive and firm.	Tied and dropped.	No	Woman's Hospital.	R	Followed in three months by rheumatic arthritis. Endometritis chronic before and after operation.	No	Gradual progressive recovery from all but endometritis.
13	Miss McF—n. March 26, 1888	35	S	.....	Soft fibro-myoma of fundus uteri size of goose egg with persistent incurable pelvic pains. Slight menorrhagia.	Symptoms for several years	Both ovaries with tubes.	No	Tied and dropped.	No	St. Luke's Hospital.	R	....	No	Left hospital complaining slightly of pelvic pains. Menses, which were rather profuse, had not returned.
14	Ida H—h. May 21, 1888.	22	S	.....	Congenital anteflexion, with dysmenorrhœa and pelvic pains, increasing in spite of many months of treatment.	5 years. Soon after menses appeared	Both ovaries with tubes.	No	Tied and dropped.	No	Woman's Hospital.	R	....	Chicago Medical Society, May 21, 1888.	Tenderness about one stump for about 3 months. Improving. Menses have not returned.
15	Miss P—w. June 26, 1888.	25	S	.....	Dysmenorrhœa. Incurable pelvic pains Failure of mental power. Enlarged ovaries.	7 years	Both ovaries with tubes.	No	Tied and dropped.	No	Woman's Hospital.	R	Cervical endometritis. Bluish softened ulcerated os.	No	Ovaries cystic and four times their natural size. Left hospital improved.

VAGINAL SECTION FOR REMOVAL OF UTERINE APPENDAGES NOT THE SEAT OF TUMOR.

No.	Name, and Date of Operation.	Age.	Married or Single.	No. of Children.	Pathological Condition or Symptoms necessitating Operation.	Duration of Disease.	What Removed.	Adhesions.	Treatment of Pedicle.	Drainage.	Hospital or Private.	Recovery or Death.	Complications before or after Operation.	Effect of Operation upon Condition requiring it.	Remarks.	Elsewhere Reported.
1	Mrs. E. D—ty. July 30, 1887.	35	M	Three	Hysterical mania and cephalalgia. Husband left her on account of supposed insanity.	Several years	Both ovaries and tubes	No	Tied and dropped	Yes, 24 hours	Woman's Hospital	R	Addicted to opium habit before operation. Retroversion.	Cured of mania, cephalalgia and opium habit.	Last attack of cephalalgia and mania was the day before the operation.	Am. Journal Obst. April, '88.
2	Mrs. N—n. July 31, 1887.	31	M	One, at 8 months	Oöphoritis, salpingitis. Right hydrosalpinx. Husband thought she was losing her mind Several years' treatment without relief. Acute attacks. Unable to work.	Many years dating from confinement	R. ovary and tube. Loosened adhesions of left ovary.	Universal and firm	Tied and dropped	Yes 24 hours	St. Luke's Hospital	R	Retroversion and endometritis before operation. Slight phlebitis on right side after operation.	Gradual progressive relief. Great gain in flesh Able to do her housework. Mental symptoms cured.	Left ovary and tube should have been removed.	Am. Journal Obst. April, '88.
3	Mrs. S—r. Aug. 11, 1887.	42	M	Three	R. ovary enlarged and neuralgic, lying in recto-uterine pouch Bedridden. Mental condition bordering on insanity. Failure of treatment.	Two years	Both ovaries and tubes	No	Tied and dropped	Yes, 24 hours	Woman's Hospital	R	Had been in asylum for an attack of insanity. Retroflexion.	Gradual uninterrupted recovery, almost complete when last heard from.	.....	Am. Journal Obst. April, '88.
4	Mrs. Annie C. Aug. 17, 1887.	24	M	Two	Hæmatoma of R. ovary size of hickory nut. Bilateral ovaritis and salpingitis. Bedridden 3 years.	Three years	Both ovaries and tubes	Universal and firm. (See remarks.)	Tied and dropped	Yes, two days	St. Luke's Hospital	R	.....	Gradual recovery. Examined in July, 1888, and found cure complete.	A porton of right tube left.	Am. Journal Obst. April, '88.
5	Mrs. C—n. Sept. 8, 1887.	43	M	One, 20 years old	R. ovary in recto-uterine pouch. L. ovary enlarged and cystic. L. tube hypertrophied.	20 years	Both ovaries and tubes	No	Tied and dropped	Yes, 24 hours	St. Luke's Hospital	R	Light anteflexion.	Able to work out two months after operation.	.....	Am. Journal Obst. April, '88.
6	Mrs. J—n. Sept. 26, 1887.	34	M	One	R. ovary in recto-uterine pouch. Both enlarged and cystic.	Since birth of child	Both ovaries and tubes	No	Tied and dropped	Yes, 48 hours	St. Luke's Hospital	R	Retroversion.	Rapid complete relief.	Retroversion cured by tamponing after operation.	Am. Journal Obst. April, '88.
7	Mrs. C. E. F. Oct. 18, 1887.	28	M	wo	R. ovary enlarged and in recto-uterine pouch. Inability to be on feet any length of time.	Four years	Right ovary and tube	No	Tied and dropped	Yes, 24 hours.	Woman's Hospital	R	Retroversion.	Rapid cure.	Retroversion cured.	Am. Journal Obst. April, '88.
8	Mrs. J—n. Jan. 14, 1888.	42	M	One, 16 years old	Chronic inflammation of appendages. Frequent acute attacks. R. ovary enlarged and cystic.	16 years	Both ovaries and tubes	No	Tied and dropped	Yes, 30 hours.	Woman's Hospital	R	Retroversion before, pneumonia during, convalescence.	Relieved until the retroversion recurred two months after operation while going up stairs. Symptoms then recurred and have improved slowly since.	Uterus tamponed in position for 2½ days and remained in fair position for two months.	Am. Journal Obst. April, '88.
9	Mrs. H—d. Feb. 6, 1888.	22	M	One, 2½ yrs. old	R. ovary size of small hen's egg, prolapsed. Pain and disability. Failure of treatment.	2½ years	Right ovary and tube	No	Tied and dropped	Yes, 24 hours.	St. Luke's Hospital	R	.....	Immediate, complete and permanent relief.	.....	Am. Journal Obst. April, '88.

Vaginal Section for Removal of Uterine Appendages not the Seat of Tumor—Concluded.

No.	Name, and Date of Operation.	Age.	Married or Single.	No. of Children.	Pathological Condition or Symptoms necessitating Operation	Duration of Disease.	What Removed.	Adhesions.	Treatment of Pedicle.	Drainage.	Hospital or Private.	Recovery or Death.	Complications before or after Operation.	Effect of Operation upon Condition requiring it.	Elsewhere Reported.
10	Mrs. J. E. D. Feb. 16, 1888.	26	M	0	Left tube contained 4 ounces of serum; Left ovary half an ounce; Right ovary and tube enlarged and prolapsed	Several years.	Both ovaries and tubes	On left side.	Tied and dropped	Yes, 30 hrs.	Private	R	Retroversion before. Abscess in recto-uterine pouch, due to a small effusion of blood after operation.	Patient passed from observation.	Am. Journal Obst., Apr., 1888.
11	Mrs. J. H. E. Apr. 21, 1888.	28	M	0	L. hæmatosalpinx. Left ovary 4 times natural size. R. appendages diseased. Prolonged invalidism.	12 years, since a fall.	Both ovaries and tubes	Extensive and firm on both sides.	Tied and dropped	Yes, 48 hrs.	Woman's Hospital	R	Fracture of coccyx. Retroversion. Small abscess in cellular tissue about stitches discharged ten days after the operation and gave no more trouble	Gradual improvement. Feels better than before operation.	No
12	Mrs. Mc E. Apr. 26, 1888.	33	M	1	Both ovaries enlarged, L. in recto-uterine pouch. Both tubes indurated and occluded. Persistent incurable pelvic pains.	Since miscarriage 5 yrs. ago.	Both ovaries and tubes	Slight of left tube.	Tied and dropped	Yes, 32 hrs.	Woman's Hospital	R	Retroversion. Exudate, size of chestnut, was found at site of L. stump 3 weeks after operation, which was rapidly absorbed.	Complete relief for three weeks, when the temp. went up to 100° F., and severe pains came on Patient felt too well and exercised too much. Improving rapidly when she left hospital.	No

Abdominal Hysterectomy.

No.	Name, and Date of Operation.	Age.	Married or Single	No. of Children.	Pathological Condition and Symptoms necessitating Operation.	Duration of Disease.	Nature of Operation.	Adhesions.	Drainage.	Hospital or Private.	Recovery or Death.	Complications before and after.	Remarks and subsequent History.	Elsewhere Reported.
1	Mrs. W—n. Aug 4, 1787.	40	M	4 and 4 misc.	Fibro-sarcoma of uterus size of man's head. Pain and rapid growth.	6 years.	Amputation and fixation of stump in wound with use of elastic ligature.	Intestinal all over it; also attached to pelvic wall.	Yes.	Woman's Hospital.	Died from exhaustion in 36 hours	Unsuccessful attempt at removal had been made 2 months before.	Stump was size of a man's thigh. Had been diagnosed to be a fibro-myoma.	Chicago Gyn. Soc., Nov., 1888.
2	Mrs. E—tt Jan 2, 1888.	34	M	1	Fibro-cystic myoma size of uterus at 9 mo. Half pint of watery fluid in right tube. Left tube contained a quart and had grown down between folds of broad ligament to pelvic floor.	7 years.	Amputation, treatment of pedicle after Schröder's (intraperitoneal). Left tube could not be removed, and was stitched into external wound.	L. tube adherent to tissues at base of broad lig.	Double. One tube in abdominal cavity, another in L. Fallopian tube.	Woman's Hospital.	Died of exhaustion in 48 hours with commencing rise of temp	Broad lig. drawn up over tumor so as to render ligation almost impossible.	....	No
3	Mary N—l. May 2, 1888.	32	S	.....	Multitudinous subserous fibro-myomata of uterus with a development under left broad lig. size of woman's head.	Discovered 5 years ago.	Enucleation from broad lig. and extraperitoneal treatment of stump after Hegar Bladder dissected from anterior surface.	None except in broad lig. and to bladder.	Yes, tube above and iodoform gauze below stump.	St. Luke's Hospital.	R	.....	....	Chicago Gyn. Soc., May, 1888.

VAGINAL HYSTERECTOMY.

No.	Name, and Date of Operation.	Age.	Married or Single.	No. of Children.	Pathological Condition or Symptoms necessitating Operation.	Duration of Disease.	Nature of Operation.	Adhesions.	Drainage.	Hospital or Private.	Recovery or Death.	Complications before or after.	Remarks and Subsequent History.	Elsewhere Reported.
1	Mrs. St—n. August 3, 1887.	29	M	1	Carcinoma of cervix.	Over a year.	Multiple ligatures of stumps with silk; catgut ligature about vaginal incision. Left vaginal and peritoneal wound open.	No	Iodoform gauze.	St. Luke's Hospital.	R	Cervix was amputated several mos. before.	No return. In good health.	Chicago Medical Soc., 1887.
2	Miss Ph—ps. Dec. 7, 1887.	57	S	.....	Papilloma of cervix and posterior vaginal wall, undergoing sarcomatous degeneration.	Discovered 1 year before.	Three hæmostatic forceps to each broad ligament. Catgut ligature to vessels about vaginal incision.	No	Iodoform gauze.	Woman's Hospital.	R	.....	Disease returned in two months; death in nine or ten mos.	Chicago Gynæcological Society, Dec., '88.
3	Mrs. G—n. Jan. 5, 1888.	47	M	2, last 25 years ago.	Fibro-sarcoma of whole uterus, with ulceration of cavity. Uterus size of small fist.	8 or 10 years.	Multiple silk ligature of stump. Catgut and two hæmostatic forceps below. Wound open.	No	Iodoform gauze.	Woman's Hospital.	R	Was curetted four times, viz.: 6½, 4½, 2 years and 1 month before operation. Thickening of right broad ligament.	So far, well.	Chicago Gynæcological Society, Mar., '88.
4	Mrs. Gold—t. March 4, 1888.	55	M	2, oldest 17 years	Adenoma of fundus and posterior uterine wall undergoing cancerous degeneration.	Unknown, but over a year.	Retroverted uterus and applied multiple ligatures. Wound left open.	No	Iodoform gauze.	Woman's Hospital.	R	Cystocele before and after.	Perfectly well, except cystocele.	Chicago Gynæcological Society, Mar., '88.
5	Mrs. Florence J—s. Mar. 25, 1888.	43	M	4, oldest 19 years	Three small interstitial fibro-myomata. Incurable stenosis. Several years of suffering and ineffectual local treatment.	Several years.	Multiple ligatures. Catgut to lower vessels.	No	Iodoform gauze.	St. Luke's Hospital.	R	.....	Cured.	Chicago Gynæcological Society, April, '88.
6	Mrs. O'B—n. May 17, 1888.	25	M	2, younger 2 years old.	Cervical carcinoma involving posterior wall of uterus, to int. os, and entire thickness.	Not well since birth of last child.	Anteverted uterus and applied a medium and a large sized pair of forceps to each broad ligament. Catgut below. Took out left ovary with ligament cut short.	Loop of intestine tied off and separated. Left ovary embedded in lymph.	Iodoform gauze.	Woman's Hospital.	R	Left ovary enlarged and adherent to bottom of pelvis. Its ligature sloughed out in three months.	No sign of a return so far.	Chicago Gynæcological Society, May, '88.
	Miss McN. June 9, 1888.	42	S	.....	Subserous fibro-myoma of posterior wall of cervix, size of goose egg.	A year or longer.	Multiple ligature of broad ligament. Catgut for lower vessels.	No	Iodoform gauze.	St. Luke's Hospital.	R	Unilocular cystoma of left ovary also removed, leaving ligature hanging in vagina.	Cured.....	Chicago Medical Society, June, 1888.

Exploratory Laparotomies.

No.	Name, and Date of Operation.	Age.	Married or Single.	No. of Children.	Pathological Condition or Symptoms necessitating Operation.	Duration of Disease.	Nature of Operation.	Drainage.	Hospital or Private.	Recovery or Death.	Complications Before or After.	Subsequent History and Remarks.
1	Mrs. Dr. —. Oct. 7, 1888.	30	M	One, premature.	Chronic salpingitis, ovaritis and retroversion with fixation. Failure of prolonged course of treatment to relieve pain and restore her to usefulness.	About 6 years.	Small median incision and separating adhesion of uterus to rectum. Could not release the tubes nor find the ovaries.	No	Woman's Hospital.	Recovery.	Weak heart, almost died from ether. Had a pelvic abscess discharge into rectum at beginning of disease.	Is now somewhat better than before the operation.
2	Mrs. At—l. Dec. 21, 1887.	28	M	0	Menorrhagia, pains. Failure of mental and physical vigor, unrelieved by treatment. Apparent enlargement of tubes.	Several years.	Median incision about 3 inches long. Found the intestines matted about tubes, and the hæmorrhage so profuse upon the least attempt at separation that I tied the bleeding vessels and desisted.	Glass tube for 3 days.	Woman's Hospital.	Death at end of 8th day, of heart failure.	Weak heart. Came near collapsing several times on operating table. Pulse always above 100.	Died at 8 a. m. while having her shoulders raised to take nourishment. Had had an unusually smooth recovery and felt perfectly well just before being raised.
3	Mrs. W G. McC—. Mar. 24, 1888.	26	M	0	Chronic incurable pelvic symptoms referable to appendages and incurable by prolonged treatment. Mind slightly affected.	Several years.	Median incision about 3 inches. Parovarian cyst of left broad lig. size of goose egg. R. appendages buried in lymph, and could not be separated. Separated a few adhesions	Glass tube for 3 days.	St. Luke's Hospital.	Recovery.	Piece of omentum size of Lima bean got into drainage tube and was torn out in removing it with considerable pain, but no after effects.	Husband thinks her mind greatly improved.

Summary.

	Whole No.	Recovered.	Died.	Per cent. Recovery.	Per cent. Deaths.
Abdominal Ovariotomies	6	4	2	66.66	33.33
Vaginal Ovariotomies	2	2	0	100.00	.....
Abdominal Oöphorectomies	15	13	2	84.62	15.38
Vaginal Oöphorectomies	12	12	0	100.00	.....
Abdominal Hysterectomies	3	1	2	33.33	66.66
Vaginal Hysterectomies	7	7	0	100.00	.....
Exploratory Incisions	3	2	1	66.66	33.33
Total	48	41	7	82.92	17.08

PATHOLOGY AND TREATMENT OF A DRY TONGUE.

BY W. C. CALDWELL, M. D.

Probably a more scientific title for this paper would be "The pathology and Treatment of Diminished Secretion from the Glands Connected with the Buccal Cavity," but the one given seems the more expressive, because everyone recognizes that a dry tongue is a symptom of profound depression of the powers of life. "The Pathology and Treatment of the Typhoid State" would be equally as expressive, but it is too broad and includes more than I desire to write about at this time.

I will present the subject in the following order:

I. Causation;
II. Pathological Significance;
III. Pathology; and,
IV. Treatment.

I. CAUSATION.

The three possible ways in which the tongue may become dry are either by increased evaporation from its surface, by diminished movement of the tongue, or by diminished secretion of saliva. The first two, no doubt, are factors in its production whenever the mouth is open and whenever the tongue lies motionless for hours unbathed in buccal secretions, as occurs in coma and in the typhoid state, the patient lying with his mouth open and his tongue motionless.

In health, if the tongue be held motionless, breathing through the mouth, there will be perceptible dryness in even ten minutes, so these can be factors in its production.

Coma does not usually continue longer than twenty-four hours without a dry tongue. Dickinson (Lumleian Lectures, 1888), does not think this due simply to the air passing over it, and cites as proof that where an otherwise healthy individual has the nostrils plugged there is no such dryness. This, though, does not prove it, because unlike in coma, the individual keeps the tongue moist by occasionally moving it about in the mouth; however, in coma I think it probable that not only is the tongue dry because it is motionless, but very likely there is some action on the centre in the medulla, which will be considered later.

But, undoubtedly by far the most important factor in the production of a dry tongue is diminished secretion from those glands which pour their elaboration into the buccal cavity, namely, the salivary, buccal, palatine, lingual, malar, and labial glands.

To determine how much diminished secretion has to do with causing the tongue to become dry, Dickinson has made many experiments on the parotid gland by catheterization. He says that "A tube passed into one of these channels in health could be made to drip saliva abundantly by the application of acetic acid to the tongue. When the tongue was dry it was usually impossible to obtain any by such means. With advanced and complete dryness I have never been able to get a drop; with lesser dryness often a little."

II. PATHOLOGICAL SIGNIFICANCE.

I have thought it well to say a few words about the grave pathological significance of a dry tongue as a means of impressing the great importance of its treatment. The gravity of this condition is made manifest by the fact that every one regards a dry tongue as a very unfavorable sign, and does all in his power to forestall its approach.

It is an unfavorable sign:

1. Because it retards digestion, and

2. Because it is evidence of profound derangement of the powers of life.

Diminished salivary secretion interferes with digestion in a number of ways, and perhaps the easiest way to show this is to give its functions, and then the effect of its absence will be more easily made apparent.

1. The saliva, by moistening the dry food, enables the tongue to roll it into a bolus which is easily swallowed; hence, when the patient has a dry mouth solid

food is swallowed with great difficulty and is contra-indicated for this as well as other reasons.

2. On account of the law of chemistry that acids and alkalies are mutually attracted, it follows that when the bolus entering the stomach is saturated with alkaline saliva, the gastric juice rapidly penetrates it and promotes its digestion.

3. The ptyalin of the saliva converts starch into sugar, and in proportion as the saliva is diminished is this act interfered with. But probably it is not so much the loss of this conversion of starch into sugar as it is the effect it has upon the taste of the food, which in turn, as will be shown, stimulates further secretion.

4. But in addition to this means of stimulating taste, one of the most important functions of the saliva is to keep the taste-buds moist so that they can perform their specific function, namely, that of making eating pleasant and thus inducing us to eat, and also that of exciting to functional activity the salivary and gastric glands for the secretion of the digestive fluids.

Physiologically the secretion of saliva is stimulated reflexly by thoughts of food, by sight and smell, but mainly by taste when the food is introduced into the mouth. In sleep the senses convey no impressions to the centre; hence, during sleep very little saliva is secreted. Also, when the tongue is dry, when the epithelial covering and taste-buds are parched and shriveled, there is no sense of taste; and hence, equally so, there are no impressions conveyed to the centre to stimulate the secretion of saliva. The patient with a dry tongue has no taste, no appetite, and when food is placed in the mouth there is no response from the salivary glands.

5. But equally as important as the stimulation of the buccal glands is the synchronous stimulation of the gastric glands. While the luscious morsel is being rolled in the mouth, the gastric secretion preparatory for its further digestion in the stomach is stimulated reflexly by sense of taste; hence, when the tongue is dry, not only are the salivary glands at rest, but the stomach, receiving no influence ahead, is idle, unprepared, and surprised by an untimely visitor. Instead of meeting a rosy mucous membrane, with clear drops of gastric juice trickling down its walls, the dry, neutral, unchanged bolus comes in contact, possibly, with a pale, bloodless surface.

To the person in health, whose body is strong and vigorous, and who has a large amount of reserve vitality, such an interference with digestion for a short time might not make a great deal of difference, but to the patient struggling with some wasting or long-continued disease, whose powers of life are already taxed to their utmost—whose heart possibly is beating at the rate of 150 per minute, unable to stand the smallest fraction of further strain—to such a patient every ounce of blood pabulum absorbed is of the greatest importance to his life.

Hence, any interference with digestion when the powers of life are running low—when, on account of the adynamic condition, threatened dissolution is impending—is of the gravest moment; and it is usually when dissolution overhangs the patient, when he most needs good digestion, that the tongue is dry as a board seasoned in an August sun.

Too much cannot be said of the great importance of keeping the tongue moist in those self-limited acute diseases which have become asthenic, such as typhoid fever, pneumonia, scarlet fever, etc. A few ounces more of nourishment absorbed may determine the fate of the patient in whom we can almost hear the death-rattle. By this nourishment, during a few hours, he may be tided over the impending collapse and begin convalescence.

A dry tongue, also, is evidence of profound derangement of the powers of life, because, not only is the salivary secretion suppressed, but the same cause very likely suppresses the gastric, pancreatic, and biliary secretions; also it is evidence of grave changes

in the blood, the great food supply for all the tissues.

III. PATHOLOGY.

The morbid anatomy of a dry tongue will not be noticed, but instead, the morbid physiology, which produces it by diminishing the buccal secretions. These secretions are produced by a complicated mechanism, consisting of numerous parts, any one of which becoming impaired, the secretion may be diminished or entirely suppressed. The pathology is nothing more than a description of the morbid actions of this mechanism and their cause, by which the secretion is either diminished, or increased, or changed in quality. For obvious reasons, in this paper only the pathology of diminished secretion will be considered; this being the main cause of a dry tongue, and often having a common origin with those other grave symptoms, indicating the typhoid state. A thorough knowledge of its mechanism will naturally form the data from which to deduce the rational indications for the treatment of that part of the typhoid state. But in order to understand properly morbid action of this mechanism, it will be necessary to study first this mechanism and its means of normal excitation; then we will be prepared to understand the ways in which it can be deranged and the agents which may impair it.

In presenting this, the following order will be used:

1. The mechanism of salivary secretion and its physiological excitation;

2. Possible derangement of the mechanism, which can diminish the secretion; and,

3. The various agents, including drugs and the morbid materials of disease, which, acting on different parts of the mechanism, may diminish the secretion of saliva.

For the production of any thing, there must be the raw material and the mechanism for its elaboration. In the production of saliva the essential elements may be classed as follows:

1. Secreting cells.

2. Lymph.

3. Nervous mechanism presiding over the intracellular metabolism and lymph supply.

This complicated secreting mechanism consists of secreting cells, adjacent to which are lymph spaces, containing the raw material which has been poured into them through stomata from the capillaries, and over the action of the cells and the lymph supply preside two nerve mechanisms—a central and a peripheral. The sources of this nerve supply are from both the sympathetic and cranial nerves, but for simplicity no description of the two sources will be given; neither will the peripheral mechanism be described. For all practical purposes in this paper this will not be necessary. The accompanying diagram, used to illustrate this mechanism, is entirely schematic, no attempt being made to give the anatomy. In it the peripheral mechanism is not shown, neither is there a separate representation of the sympathetic. The nervous mechanism, shown in the diagram, consists of afferent and efferent nerves and a centre in the medulla.

The afferent nerves convey impressions to the centre from taste, smell, sight, thoughts, and also from irritation of sensory nerves in various other parts of the body. The efferent nerves, probably six kinds in all, convey impulses from the centre to the glands. The trophic fibres continually convey impulses generated in the centre to regulate cellular growth and nutrition.

Probably ptyalinogenic (anabolic) fibres continuously convey impulses generated in the centre to regulate that continuous protoplasmic metabolism, the manufacture of ptyalinogen, for the intermittent production of ptyalin. The secreting fibres at intervals convey reflex impulses from the centre, producing secretory activity of the cells. The vaso-dilator and vaso-constrictor fibres preside over the arterioles, regulating their calibre and the quantity of blood passing

through them. Probably regulating fibres preside over the stomata in the capillaries determining the quantity of lymph which can pass through them into the lymph spaces.

The centre in the medulla receives impressions from the afferent nerves and switches them onto the efferent nerves, by which influence the size of the arterioles and stomata are regulated, and also the activity of secretion; in addition, the centre generates impulses which pass along the trophic and ptyalinogenic fibres to the gland.

Physiologically the mechanism does not act except when it is set to work by reflex influence from taste, smell, sight and thoughts of savory food. Normally, when there is no reflex stimulation, there is no secretion. The normal excitation of the mechanism is illustrated by the accompanying diagram, in which the afferent nerves are shown conveying impressions from taste, etc., either directly or indirectly, to the centre in the medulla, from which they are reflected to the efferent nerves, along which they travel to the gland. This is the explanation of why the hungry boy's mouth waters when he sees the inviting pastry and cake in the baker's window, or when his nostrils are regaled by the exhilarating aroma arising from the steaming dinner-pot. These physiological facts can be used to advantage in retaining and creating an appetite in the invalid. When there is any interference in any part of the

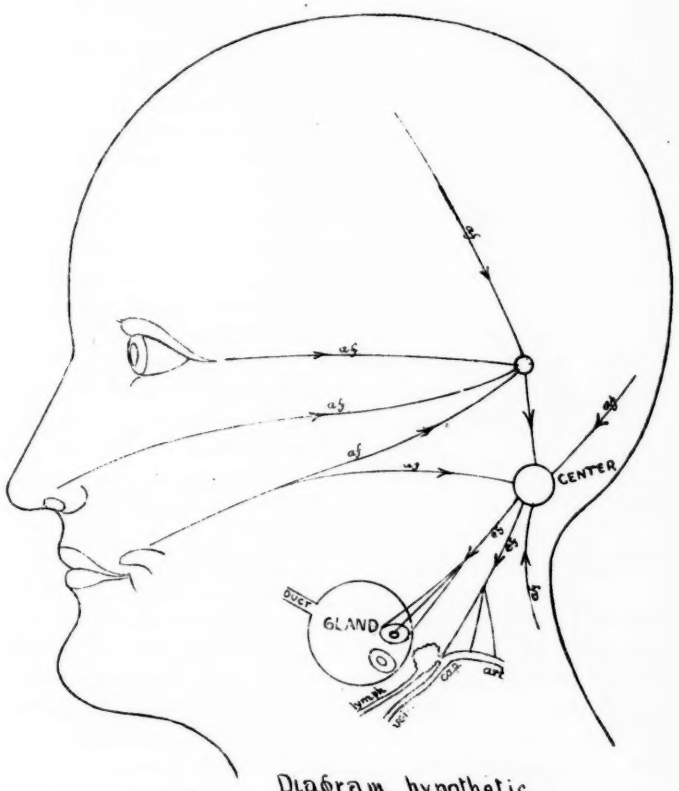

Diagram hypothetic and schematic.

circuit from the afferent ends to the terminal fibres in the glands, the secretion is proportionally deranged. Hence, if from any cause, the circuit is broken in any part the normal reflex stimulation of saliva can not occur. And if this be continued long the mouth and tongue become dry The points at which disease and drugs usually break the circuit are the taste-buds, the centre or the terminal fibres in the gland. The nerves themselves are not so susceptible to drugs and disease.

The secretion of saliva is more or less intermittent, but the manufacture of ptyalinogen is going on all the time, under the influence of impulses generated in the centre, just as is the manufacture of mucinogen, pepsinogen, trypsinogen, etc.

To prevent confusion, it is well to keep clearly before the mind the distinction between the possible derangement of the mechanism and the various agents which can produce them; but while these should be kept apart, yet, for convenience, to prevent repetition, I will present them together.

The conditions necessary for the secretion of saliva are normal lymph supply, normal lymph, and normal secreting cells, normally stimulated; hence the secretion is diminished:

1. By lessening the lymph supply.
2. By changing the quality of the lymph.
3. By depressing the functional activity of the cells.

The lymph supply is lessened:

1. By reducing the quantity of the blood in the body. This is made known by the person who has lost blood calling for water to quench his thirst The tongue becomes dry in profuse diarrhœa and where there is free perspiration.

2. By contracting the arterioles so that a smaller quantity of blood passes through the gland, and hence less lymph enters the spaces, the food reservoir of the secreting cells. The calibre of the arterioles can be reduced either by increased action of the constrictors, or diminished action of the dilators.

While physostigma stimulates the secreting cells, it also stimulates the constrictors; hence, while at first it increases the secretion, later, as soon as the stock of lymph in the spaces is used up, the flow of saliva is diminished because the arterioles are contracted. The same phenomenon occurs when the sympathetic is stimulated by electricity. I have not been able to find any record of experiments on diminished action of the dilators causing contraction of the arterioles.

3. By closing the stomata of the capillaries. Atropine acts on the terminal ends of the fibres, presiding over the stomata probably, causing them to be closed so that the lymph cannot pass through them into the spaces, although at the same time it increases the blood supply by dilating the arterioles.

4. By inhibiting the functional activity of the centre in the medulla, so that the normal impressions from taste, etc., can not be transferred to the efferent nerves to stimulate cell activity and blood supply. Morphine dries the mouth by acting directly on the centre, depressing it. Fear parches the tongue, probably, by afferent impressions from the brain passing to the centre inhibiting its action. So with sudden bad news, worry, sleeplessness, delirium, and pain; however, it is possible that these may also have an inhibitory action on the vaso-dilators, rendering the glands pale and bloodless. Morphine and pain may both dry the mouth, the morphine directly and the pain reflexly, so that both render the centre functionally inactive, yet a small dose of morphine, by relieving the pain, and, hence, the reflex inhibition, may moisten the mouth.

It is probable in apoplexy that the pressure affects the centre and helps to cause the dry tongue. Though sometimes disease of the brain increases the secretion. Stimulation of the cortex cerebri of a dog

near the sulcus cruciatus sometimes is followed by secretion (Landois). Pulling out a loop of intestine inhibits the reflex secretion of saliva (Pawlow). The afferent impression is conveyed to the medulla, where it inhibits the action of the centre. It is very likely that partly in this way is the dry tongue in typhoid fever produced. The irritation from the ulcerated and tympanitic intestine is conveyed by the sympathetic to the spinal cord and from there to the centre. Of course, the depraved condition of the blood has much to do with it, but probably not all, which supposition is still further strengthened by the well-recognized fact that turpentine is of great service in these cases.

The quality of the lymph is changed by drugs and also by the products of disease circulating in the blood, and by the effect they have in the course of days or weeks upon the nutrition.

The various changes in the lymph may be enumerated as follows:

1. It may be saturated so that there is no available water.

2. It may contain toxic agents.

3. It may be almost devoid of food elements.

1. Every one knows that after eating a salty meal great thirst follows. The salt has suppressed the salivary secretion because it has great affinity for water, and hence, in proportion as the blood contains salt, is there less available water that can be used in secretion. The same effect is produced when any other deliquescent substance is in the blood, whether it be a drug or a product of disease.

It is very probable that the excessive quantity of histolytic waste circulating in the blood of the fever patient has much to do with his thirst, and, later, his dry tongue, though, of course, the evaporation on account of the high temperature has its effect in producing thirst, just as we become thirsty on a hot day after freely perspiring.

2. Just as some of the vegetable alkaloids and mineral drugs introduced into the circulation act as antisialogogues, so it is probable that some of the numerous leucomaines produced by the various diseases act as antisialogogues.

3. After the patient has been sick for some time, the digestive organs, along with the others having suffered, they now in turn increase the trouble further by their inability to supply sufficient food. Gradually the blood becomes more and more impoverished. This is a most important factor in salivary depression. Not only are the cells deprived of raw material from which to elaborate the fluid, but they and all the other parts of the mechanism have been starved till they are unable to work.

The functional activity of the cells may be diminished:

1. By lack of stimulation. This may be due to failure of action of the taste-buds or of the centre or of the terminal fibres in the gland. When the tongue is dry the taste-buds are functionally inactive, hence no impression is conveyed to the centre, and so, in addition to the depression of the powers of life which has produced the dry tongue, another factor is developed to still further depress the system, for taste is gone, and hence there could be no stimulation of saliva were the glands themselves able to respond. Or, again, as has been shown, stimulation can not reach the glands if the centre fails to transfer, or if its course is cut short at the terminal ends in the gland.

3. By direct depression of their activity. This is probably produced by leucomaines as well as by drugs. It is sometimes the result of disease of the glands, as in mumps.

Hence, in conclusion, it may be postulated that in order that there may be physiological secretion there must be:

1. Normal secreting cells.

2. Normal nervous mechanism—end organs, centre and terminal fibres intact, so that there is no break in the circuit.

3. Proper supply of blood, containing sufficient amount of nourishment and water and free from antisialogogue leucomaines.

And it may also be postulated with equal positiveness, when the tongue is dry from diminished secretion, that there is derangement of some one of them. Either the secreting cells are deranged, or the blood supply is imperfect or poisoned, or the nervous mechanism is not intact.

IV. TREATMENT.

The object of treatment is to improve digestion so that the vital organs may be fed, for without nourishment they can not work long in health, and much less when they are already wasted, weakened, and grappling with some malignant disease.

The rational indications for treatment are learned by a survey of the possible points of the mechanism that can be deranged, and then a determination of what point is at fault. If the centre is at fault, and treatment be applied empirically at the periphery, little success can be expected from such a course.

The thing to do is to find the defective point and repair it, if possible, just as the watchmaker looks for the broken piece and replaces it.

The indications for treatment based on the pathology may be classified as follows:

1. To improve the lymph supply.
2. To improve the quality of the lymph.
3. To improve the functional activity of the secreting cells.

As the different parts of the organism are so closely related and dependent on each other, the improvement of one often improves another; hence, in filling one indication sometimes another may be satisfied, so there is no sharp line of demarkation between these indications.

QUANTITY OF LYMPH.

1. If the dry tongue follows profuse hæmorrhage, of course replenish with water and liquid food.

If lymph is deficient from excessive discharge, as occurs in diarrhœa where the stools are copious and watery, control the diarrhœa or soon another factor of disease will appear—failure of digestion from suppressed secretions. If it be already present, in addition to checking the alvine discharge, attention should be directed to keeping the buccal cavity moist, to avoid further adynamia and collapse. For this, see treatment of the taste-buds. If the quantity of water in the blood is deficient on account of excessive evaporation during high temperature, allow the thirsty patient to drink water freely to refill the empty vessels, unless from some cause it should produce vomiting.

2. If, from any source, impressions travel to the centre, which either inhibit its action, or, when switched on to the efferent fibres in some of the possible ways, inhibit secretion, then give such drugs as either prevent such impressions being conveyed to the centre, or depress the centre so that they will not be transferred to the glands.

If the patient with parched tongue is sleepless and tosses to and fro on his uncomfortable bed, or worse, if he is delirious, give bromides, hydrate of chloral, urethan, or some other hypnotic, to arrest the pathological cerebration which is conveyed to the centre and interferes with secretion. This is the explanation of why the dry tongue of the delirious patient, after a few hours' refreshing sleep, sometimes begins to moisten.

For the same reason, if, in a continued and low grade of disease, there is much pain, morphine judiciously given will often moisten the dry tongue. Also, for the same reason, partly, turpentine is of such great benefit where there is inflammation of the mucous membrane of the intestine, with dry tongue.

The value of turpentine in chronic intestinal catarrh, with dry, glazed tongue, also in typhoid fever, is well recognized by everyone. Turpentine is an antiseptic and arrests fermentation, removing the tympanites; it also relieves intestinal congestion by giving tonicity to the intestinal circulation, by improving the cutaneous capillary circulation, and by lessening the catarrhal inflammation or the ulcerated condition of

Peyer's glands, the impressions are shut off which, transmitted to the centre, inhibit secretion. But in addition to this means of moistening the tongue, turpentine undoubtedly does much as a diffusible stimulant, acting on the heart and vaso-motor centre, raising the blood-pressure and producing a sense of exhilaration. Yet, without its action on the intestinal canal, it would fall far short of its present position in the treatment of typhoid fever.

If the function of the centre is compromised by pressure from cerebral hæmorrhage or inflammatory exudate, of course all that can be done is to treat the disease.

QUALITY OF THE LYMPH.

1. If there is deficient quantity of available water in the blood on account of saturation with hygroscopic, pathological, retrograde metamorphoses, give water freely, not only to supply the need, but to wash out the vascular and lymph channels, clearing away as fast as possible the débris from the glands.

2. At present not much is known of the physiological action of leucomaines, but if the secretion is suppressed on account of the blood being charged with antisialogogue leucomaines, inhibiting the centre, stimulating the constrictors, paralyzing the dilators, closing the stomata, or depressing the secreting cells, in lieu of any thing better till further research has shed more light, exhibit plenty of water to wash them out of the system through the kidneys, skin, and intestines.

Also, bathe the fever patient one or more times daily, to promote the action of the sweat-glands. For other reasons, add one-third alcohol to the water for the bath.

Water taken internally is of unquestionable service in disease. When large quantities are taken, large amounts pass out of the organism through the excretory glands, and with it is carried the retrograde products soluble in water; also those rendered soluble by the action of medicine. Water also washes out the intestinal canal, removing irritant material, and preventing reabsorption of the waste excreted through the intestinal glands. When given with medicines which are to act after entering the blood, it prevents irritation and promotes their absorption. When taken after the food it promotes absorption of the peptones, and hence increases further digestion. The peptones, like all products of fermentation, arrest the succession of complicated reactions which take place in the process. Water increases cellular metabolism, especially in the weak, whose cells have a low grade of vitality, and in those depraved by disease. Water is necessary for the metabolism of all cells, but in those cells of poor vitality, water is a tonic. It greatly increases their functional activity, increasing both the production and excretion of urea, sulphuric and phosphoric acids. In these weak cells it probably increases their nutrition by washing out the waste and supplying needed water.

But too much water is said to do harm. It may cause dyspepsia by unduly diluting the gastric juice, or, if the stomach is irritable, it may produce vomiting. It is also said to destroy the red corpuscles when the blood is diluted too much.

Yet it seems to me that there is far more danger of using too little than too much. Undoubtedly, when there is a high and continued fever, rapidly melting down the nitrogenous structures and filling the blood with urea and urates, that the free, frequent, and continuous exhibition of water is indicated to prevent asthenia, and if it is already present, to aid in removing it.

3. If the blood is so profoundly depraved that it is destitute of proper materials to supply the cells with sufficient food, in addition to treating the disease, every effort should be made to improve the digestion. This will be noticed a little later. This may accomplish very little, but that little may be sufficient to sustain the heart and respiratory function a few hours longer.

FUNCTIONAL ACTIVITY OF THE CELLS.

Very common causes of depressed functional activity of the secreting cells are lack of stimulation on account of the dry, functionally inactive taste-buds, and lack of food from failure of digestion in general.

Much can be done to improve the taste-buds by acting locally. Keep the gums, teeth, and tongue well cleansed by frequent washing with some appropriate antiseptic wash, which puts the epithelial covering of these structures in as healthy a condition as possible. Instead of giving plain water, allow the patient to have acidulated drinks, because the acid stimulates secretion from the alkaline mucous membrane.

Where the tongue is dry, brown, encrusted, and hard, remove the coat as much as possible, and for a few minutes before giving liquid nourishment, place some crushed ice on it, and allow it to remain. The ice will at first cause anæmia, which will soon be followed by a local hyperæmia, resulting in increased nutrition of the taste-buds. The tongue for the time being will be red and moist. If this be persisted in, in typhoid fever, pneumonia, and other low fevers, however little effect in itself it may have, it will often improve digestion enough, so that in a few days the improved digestion is sufficient to keep the tongue moist, and thus in turn again improve digestion and the powers of life.

But probably, of any single agent for improving digestion when the tongue is dry, the most potent is some acceptable, pleasant-tasting preparation of alcohol.

In the typhoid state this should never be given alone, but always with liquid food, the explanation of which will soon follow. Alcohol is superior to the other diffusible stimulants for continuous exhibition in many ways. Of course turpentine has its unique place when the intestinal canal is a cause of the dry tongue. But no other drug can take the place of alcohol in the treatment of the typhoid state. It is pleasant to take, and does not interfere with digestion by repugnance to it. It produces hyperæmia of the mucous membrane, and both directly and reflexly increases the digestive secretions. At the same time reflexly, and a little later directly, it dilates the cerebral arterioles, causing a feeling of exhilaration, which is also increased by simultaneous stimulation of the heart, so that the tired, exhausted patient, under the excitement, has more couarge to take nourishment.

If alcohol were given alone, without food, it would stimulate the heart and produce hyperæmia of the digestive canal. This expenditure of energy would be wasted, for there would be no food in the canal to be digested. Hence, in giving alcohol to sustain the heart, always give food. Alcohol and liquid food should be given together in small quantities every two hours.

Alcohol occupies the peculiar position of being a stimulant, as ether, chloroform, and turpentine, and at the same time of being a food, as such carbo-hydrates as starch and sugar. Like ether, it liberates the energy which during health has been stored up, and, like the carbo-hydrates, it supplies force itself by being oxidized, and in addition to this, while it is itself oxidizable, it has the remarkable property of diminishing oxidation of the tissues. It arrests oxidation of the tissues by rendering the hæmoglobin less active, and by abstracting the oxygen from the tissues—usually stopping the oxidation process at the stage of fat.

Alcohol is a valuable agent in the treatment of the typhoid state, because it improves digestion, sustains the heart, supplies force, lessens oxidation, and quiets the restless brain.

Not only when the tongue is dry, but before the system has been so much depressed, in continued disease, where the patient is on liquid diet for days, the food should be seasoned with proper quantity of salt. This is specially overlooked when the patient is on milk diet. Of course,

there is some salt in milk, just as there is in meat, but not enough, except in normal mother's milk, where the babe only needs the salt it contains. However, when cow's milk is used, either for the babe or for the sick, it should be salted, the salt preventing solid coagulation of the cow's milk by the gastric juice. Salt has important uses in digestion and nutrition. It is necessary for the secretion of the hydrochloric acid, which in fevers is usually suppressed long before the peptic secretion. It is also used in the production of the bile salts, and that portion which enters the blood, in some way is necessary to the vital processes in producing urea and carbonic acid.

When the tongue persistently remains dry, in spite of all these means, the frequent administration in small quantity of alcohol and peptonized beef, milk, or gruel, which requires no digestive help from the crippled salivary and gastric glands, may be slowly absorbed by the sluggish circulation in the gastric mucous membrane in limited quantity, but sufficient to furnish a little nourishment to the starving secreting cells, which may be manifested by a slight moistening of the tongue and exfoliation of the dead coat.

It is not only important to remove, but equally so to prevent the development of, a dry tongue, and in attempting to do this no pains should be spared in using all those apparently and singly insignificant means of exciting taste and increased desire for food. Relishes and aromatics should be judiciously used in flavoring the food to suit the peculiar whims of the patient. It should be remembered that smell and sight, and the thoughts which they suggest, are often powerful agents in their action on the digestive tract, advantage of which should be taken, preparing the meals so as to be as inviting and as little repugnant as possible. Here is a chance for the trained nurse to show her taste, judgment,and culinary ability. She who, by her tidiness, taste, and good cooking, caters successfully to the capricious appetite of the fever-stricken patient, does as much for the sufferer as the physician.

The conclusion to be reached from the above is, that in continued fevers, while medicines can be of unquestionable value, yet, without the copious use of water and palatable, nutritious liquid food, at short and regular intervals, they are of little value.

168 South Halsted Street.

EDITORIAL.

EXERCISE AND FATTY HEART.

Recently there has been quite a revival of the suggestion, made many years ago by Professor Stokes of Dublin, of the advantage resulting in fatty heart from systematic muscular exercise, as by gymnastics, mountain climbing, etc.

Doubtless, within certain limits, this advice may be followed with advantage, either with or without medication; but probably the greatest danger attending such efforts lies in the difficulty of securing moderation, and progressive increase in the amount of the exercise,without which danger to life would be materially augmented. Similar debility of the recti muscles is frequently found in cases of asthenopia, and is benefited by systematic and progressive exercise of those muscles. Both instances are but illustrations of what has been so long and so well known of not only the advantage but the necessity of proper muscular exertion, confined within the recuperative power of the muscles exercised. It seems requisite that old truths should often be retold, in new ways and with new illustrations, that sight of them shall not be lost. At present this is one of the illustrations, with a useful and practical object in view. It is to be commended if confined to the limits of safety, but the dangers, as well as the advantages, should be fully presented, with reliable guides to the recognition of impending danger, and a safe course out of it. With-

out these there will doubtless be other victims added to the list of those who have spasmodically evinced more enthusiasm than discretion in the matter of physical exercise, especially in the now popular athletics.

THE NEED OF A MEDICAL REFERENCE LIBRARY.

At the present time there is considerable attention concentrated upon the Newberry Library, which is being organized here, and an effort is being made to secure the establishment of a medical department in it. It is understood that this is to be strictly a reference library. The endowment is ample to make it complete in all departments of science and art, if the money be properly expended.

There are two things that are essential to any important library—books and a capable librarian. For the Newberry Library such a librarian has been secured, and if too much money be not expended in monumental buildings, as has too often happened, so that the essentials have ever afterward suffered, the Newberry Library may be made of inestimable value for reference. It is very desirable that such a mistake be not repeated here, as making the building of first importance and its contents a secondary consideration.

Chicago has become an important medical centre, with several medical colleges, and the medical men resident here need the advantages which a large medical library of carefully selected books of reference would afford. Physicians from other points, especially in the interior of our country, would also find it of great assistance to them in their literary work. The library of the Surgeon-General's office of the army in Washington affords such facilities, especially for Eastern physicians, but it is almost inaccessible, because of its remoteness, for physicians residing in the interior. The present occasion affords an opportunity of supplying this need, and the trustees of the Newberry Library should recognize the fact and provide for a medical department, to be in keeping with what it is proposed to make the other departments. It would be incomplete without a medical department thus equipped. Access to such a medical library would not only be a great convenience, but the advantage to medical science would be incalculable.

The State has appropriated money for moderate libraries in some of its charitable institutions, but political and other considerations led to the locating of these institutions in various parts of the State, and the libraries are not available except to a very limited number. Chicago has never made a successful effort to build up a medical library, and there is now no collection of medical books in the city sufficiently complete for reference. In the Chicago Public Library there is a limited medical department, containing books obtained from various sources, but it is without a special librarian devoted to its care and prosperity alone. With the co-operation of the profession, and the library officials, this incomplete collection of books could be made a servicable library in time, but probably not such a reference library as is needed. A librarian devoted especially to the interests of the medical department is a requisite. The profession should support the administration in its efforts to increase the usefulness of this department, and aid in contributing to it, even more than it has already done. The library should contain the current American and foreign serials in medicine and biology in different languages. These journals should always be accessible.

Complete files of the same serials, running back as far as possible, would be a desirable acquisition, and a librarian devoted to this department alone could do much to secure them and other matter of various kinds that would materially increase the value of the present medical department for the use of the medical profession.

OBITUARY.

Professor Elkanah Williams, M. D., of Cincinnati, died at Hazelwood, Pennsylvania, October 5, 1888. He was born in Bedford, Indiana, December 19, 1822. He graduated in medicine in Louisville, Kentucky, and located in Cincinnati. Soon after Professor Helmholtz made known the ophthalmoscope and its revelations, Dr. Williams visited Europe and devoted himself to the study of diseases of the eye, especially in Germany and France, for nearly three years. In 1855 he returned to Cincinnati, and was soon elected Professor of Ophthalmology in a medical college. The honor has been accorded him of being the first scientific ophthalmologist established in the United States. For more than thirty years he was a successful practitioner in his favorite branch, as well as a teacher and writer of recognized ability. His professional attainments and his personal worth inspired confidence in all who came in contact with him, and his social qualities made friends of all who knew him well. He was a man among men. Two years ago, whilst he was engaged as president-elect in the work of organizing the section of ophthalmology in the Washington International Medical Congress, it was discovered that his health, previously impaired, was rapidly failing, and, on consultation with his medical advisers, it was decided that he should abandon for an indefinite time all work and anxiety. After that decision, in writing to a colleague and expressing his regret at this enforced abandonment of his work in connection with the Congress, in which he took great interest, he said: "Much as I would like to serve the Congress, when I know that it is prejudicial to my health, I feel it my duty to resign; health is precious above all considerations."

For more than a year it has been manifest that his most serious affection was organic disease of the brain, and that was the immediate cause of the death by which America lost her Nestor among scientific ophthalmologists, and within a few months of the demise of his friend and confrère, Professor C. R. Agnew, than whom no two men in the United States did more to secure recognition and respect for scientific specialism in the medical profession. All will concede that in the death of these two great and good men the medical profession and our country have sustained a serious loss.

SOCIETY REPORTS.

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.

The first annual meeting was held at Washington, September 18, 19, 20, 1888.

First Day—Morning Session.

The President, Dr. W. H. Taylor, of Cincinnati, called the meeting to order and delivered his annual address, in which he said: On the assembling of this association for the first time, it may be proper to demand a reason for its existence. The daily round of professional experience impresses the practitioner of medicine with the incompleteness of his knowledge, and to the man who sees in his avocation something more than a mere source of pecuniary profit there must arise the desire to know the yet unknown. No argument is needed to prove the assertion that the united effort of many is more fruitful than the inharmonious working of individuals; hence the propriety of co-operative organization. It may be admitted that the motive of our association is, first, our own advancement, yet it cannot be considered undue self-adulation if we believe that from such combined effort good must come to the profession at large, and necessarily through the profession to those who, above all others, are interested in the perfection of our knowledge and skill—our clients.

The activity of the past decade has given us so many important facts that it would scarcely be hyperbole to say that a new practice of obstetrics and gynæcology has

been created in that time. But the very fact that there has been such progress, and that so much that but a few years ago was impracticable or even unknown is now feasible and well known, only stimulates us to better work and further advance; and, with the vast range of study and diversity of subjects now comprehended by the science of medicine, it is clear, beyond controversy, that advance can be made only by men directing their efforts to a limited field of work. Such, gentlemen, I believe, are sufficient reasons for our presence here to-day as the American Association of Obstetricians and Gynæcologists.

An opinion has large credence among the laity, and is indorsed by some members of our profession, that intentional abortion is a common crime, while statisticians and social scientists see in the decreasing fecundity of American women clear evidence of the truth of this charge. That some women are guilty admits of no doubt, but that it is so universal an evil as sensational literature, especially of non-professional origin, would indicate, I do not believe. Permit me to direct your attention to a more demonstrable cause for diminishing fertility. I need but remind you of the deleterious influence of social habits and circumstances over the functions and physique of women, and, consequently, how many fashionably-educated girls are incapable of completing the process of maternity. Those who are fond of charging American women with the crime referred to, cite to us the rich, the educated, the refined, as guilty, while their sisters who are less favored financially, and are humbler socially, bear their due proportion of children. Now, the first class are the physically feeble, the enervated, and therefore incapable of carrying the process of reproduction to its ultimate perfection. A lack of fecundity on the part of a woman is often due to endometritis, and is overcome by the cure of the diseased condition. Many cases of sterility after the birth of one child are due to inflammatory processes of the genitalia. Accept these statements as true, and a rational explanation of the asserted evil is found, which at once transfers it from the domain of ethics and morals to within the pale of our professional care, and at the same time vindicates those whom we look upon as the purest and best from the indiscriminate charge of the murder of their unborn children.

I believe the influence of the genitalia over the general system, especially in its nervous manifestations, has been exaggerated; that entirely too much attention has been paid to the genital organs in connection with the neuroses.

A subject of practical importance, urgently demanding attention from the obstetrical section of our association, is the constantly-increasing inability of women, who should be "nursing mothers," to furnish milk for their infants. Many women who have borne children are incapable of nourishing them; probably about 40 per cent. with us, and, according to Escherich and others, in Bavaria, 59 per cent. of mothers become incapable from physical causes of nursing their children within two months after delivery. In a large degree this is the result of habits tending to impair the integrity of the mammary glands.

Another topic well worthy of our most careful thought is, What can be done to mitigate the pains of labor? My impression is that, with the great majority of obstetricians, but little is done to lessen pain during a large part of the process of delivery. With the abundant therapeutic resources of the present day, we ought surely to divest this ordeal of the intensity of its pain. I trust by another meeting to report upon some experiments I am now making.

It has been said, as civilization progresses the tendencies of all human diseases has been to assume the neurotic type, and also that diseases become more complex in their manifestation. On the other hand, the recent advances in antisepsis allow the hope that some day we may

eradicate the septic diseases of child-birth, and that our grand advances in surgery shall qualify us to cope successfully with what, a few years ago, would have been considered a helpless and hopeless condition. Science knows no sentiment, and we can cherish the achievements of the past only so far as they aid us for the future. Science almost every day brings a new surprise, so we may confidently anticipate advances and successes which shall as far surpass our present attainment as these do those of the past generation, and happy may we count ourselves that this association shall contribute to these beneficent attainments.

Dr. A. CORDES, of Geneva, Switzerland, sent two memoirs, which were read by the secretary. The first paper was on the "Treatment of Puerperal Eclampsia," and contained a report of four cases treated by the injection of bromide of potassium and chloral hydrate, with abstraction of blood over the mastoid processes by leeches. He advocated this treatment in preference to general bleeding, chloroform, and arterial sedatives. He also deprecated any interference with the genitalia, such as digital examination, passing the catheter, etc., which he thinks are liable to provoke convulsions.

The second paper was "The Treatment of Endometritis" by injections of pure nitric acid, and was illustrated by three cases in which this method was employed. The writer preferred this method of treatment to that by the curette, in cases where there were fungosities or other irregularities of the intra-uterine surfaces.

Dr. A. LAPTHORN SMITH, of Montreal: I would like to be permitted to say a few words on this very important subject. I think we should lay down three principles to guide us in these cases. Puerperal convulsions are due to mechanical pressure on the renal veins. If that remains too long, it will bring on uræmia. Uræmia continued long enough produces permanent damage to the brain. We should empty the uterus and take the pressure off the renal veins at the earliest moment we are sure such a condition is in existence. I have acted myself for two or three years on that plan, and have had no cause to regret it. The only regret I have is that during five or six years I adopted the method of waiting. Although none of the patients died, all of the children did, and one of the patients was in an asylum several years. I think if premature delivery is brought on under antiseptic precautions, we will in all cases save the woman, preserve her brain intact, and occasionally save the child. But the child is, however, a secondary consideration.

Dr. BYRON STANTON, of Cincinnati: I would like to ask if bringing on labor is not adding fuel to the flame; if it is not better to defer as long as possible the induction of labor, and treat the renal condition; place the patient in better condition for delivery. We know that convulsions do not always cease at delivery.

Dr. A. LAPTHORN SMITH: I do not think you should wait until the woman has convulsions. If you know that the urine is loaded with albumen, bring on labor without delay. Every moment of delay you increase the danger.

Dr. JOSEPH PRICE, of Philadelphia: The gentleman that has just taken his seat expresses a great deal of wisdom in his remarks. Mr. Tait calls attention to the frequency of such troubles in elderly primiparæ. It is claimed that it is exceedingly common in that class of patients.

"The Indications for Drainage in Abdominal Surgery" was the subject, of a paper by Dr. JOSEPH PRICE, of Philadelphia. He said the object of his paper was to point out the indications for drainage in abdominal surgery. At the present time, there is the greatest variance in the opinions and practice of surgeons upon this point, and some fixed rules, such as are laid down in other departments of operative surgery, are needed.

First: Is there danger from the reten-

tion of fluids in the peritoneal cavity? Second: Is the drainage-tube a safe means of obviating this danger? Third: If the tube involves danger, what are the comparative risks from its employment or omission? That the peritoneum will relieve itself of exuded fluids is well known; and it is also an established fact that the free use of saline cathartics will often arrest acute peritonitis. Experience has also shown that these resources often fail, and it is necessary to re-open the abdomen, irrigate the peritoneum, and insert a tube; this, too, in cases where no pus is found. It is a fallacy to believe that extensive adhesions are alone an essential indication for drainage, since free exudation can arise from severing slight adhesions and extensive bleeding follow slight ooz ing after the patient reacts. This latter fact was illustrated in a recent case in which bloody exudation, which seemed almost nothing at the close of the operation, flowed freely through the tube for ten days afterward. A great difficulty is presented in deciding a case to be simple, particularly in cases of inflammation of the tubes and ovaries. Indeed, no one can decide during an operation whether the inflammation is simple, purulent, or specific. Herein is an additional indication for the cautery used by Keith. Drainage removes the pabulum of infection. In case of very extensive adhesions and positive hæmorrhage, the value of the tube cannot be questioned.

The danger involved in inserting a simple glass tube in the abdomen is very small. The involvement of the peritoneum in the perforations of the Bantock tube has been urged as an objection to its frequent use. This danger may be entirely obviated by carefully packing the tube lightly with absorbent cotton, which also, by capiliarity, facilitates drainage. The tube should be rotated occasionally and slightly elevated. When kept clean, by frequently changing the cotton, with careful attention to that part of the incision through which it is introduced, there is no appreciable danger of infection. I have reached this conclusion after using it in extreme cases of pelvic adhesions, extra-uterine pregnancy, hysterectomy, pus tubes, and so-called simple operations. I have never had a single fatal result which could be attributed to the use of the drainage-tube, and in numerous cases I have seen serious trouble relieved by its introduction.

Irrigation is an important adjunct to drainage in abdominal work. It is of the utmost value in removing débris, clots, and shreds. Pouring water through the incision is not so efficacious as its introduction by a syringe, which makes an uninterrupted current. I place the nozzle of the syringe through the lower angle of the incision, and with two fingers retract the intestines, thus giving free exit to the current. In this way the entire abdominal cavity can be thoroughly washed out. I can not see any advantage in Professor Martin's method of drainage through the vagina. To close the ventral incision to make one in the vagina seems to me unnecessary and illogical. If drainage be decided upon, the site of the incision offers every requisite.

All chemical solutions are unnecessary and positively harmful. Such agents introduced into the peritoneum have done much mischief. The intestinal pain so often following operations in which solutions were applied is, in many cases, due to the adhesions formed in consequence of their use.

In deciding the important question, When shall the tube be removed? we should look to the character and quantity of the discharge. When this is clear and sweet and scant, the tube should be removed. It has been urged that the tube delays union and thereby increases the danger of ventral hernia. This I do not believe. A very long incision, getting up too soon, and discarding the bandage too early, are the most potent causes of this accident. Indeed, I believe the objections urged against the use of the drainage-tube are theoretical and deserve no consideration, in view of the important and serious perils eliminated by its

use, viz., protection of the peritoneum from infection. The faith I have placed in it has been fully justified by the results attained.

Dr. CLINTON CUSHING, of San Francisco, presented a contribution to the study of "Pelvic Abscess." He defined a pelvic abscess to be any collection of pus in the cavity of the pelvis which exists in the tissues outside of the cavity of the hollow organs, such as the bladder, uterus, Fallopian tubes, and the rectum. He was becoming more and more convinced each year of the truth of the statement made by Noeggerath, that uncured gonorrhœa in the male is a very frequent cause of salpingitis. A recent case came under his observation, in which this theory was verified in every particular. A woman twenty-seven years old, had been seduced nine years before; since that time she had apparently led a moral life, but had suffered from chronic pelvic abscess, resulting in repeated attacks of pelvic inflammation. She had lately married, immediately following which all her symptoms became very much aggravated, while the husband himself contracted a severe urethritis, which resulted in perineal abscess. Her case becoming serious, he saw her and diagnosticated a probable pelvic abscess. Upon opening the abdomen the right Fallopian tube was found distended with pus at its larger extremity, and a pelvic abscess containing several ounces of pus. He removed both tubes and ovaries. A microscopic examination showed gonococci present in both tubes, mingled with the pus. The secretion of the urethra of the husband also contained gonococci. This case would seem to demonstrate that the woman had been infected with the gonorrhœa nine years before; that its specific character remained in the Fallopian tubes, causing frequent attacks of pelvic inflammation; that the husband had contracted the disease of the woman; that the sexual relations had aggravated the already existing disease of the woman, resulting in the formation of the pelvic abscess, which necessitated operation. She recovered without a bad symptom.

In another case, he opened the abdomen and found that a portion of the abdominal cavity below the umbilicus was an immense sac of pus, containing at least a gallon. A counter-opening through Douglas' pouch was made, and a drainage-tube drawn through the abdominal opening into the vagina. On the second day the bladder sloughed, the urine escaping into the pus cavity. An artificial vesico-vaginal fistula was formed, that the urine might drain from below, and thus enable the pus cavity to heal. At the end of the year the cavity was healed, the abdominal wound was closed, the vesico-vaginal fistula was repaired, and the patient restored to health.

Dr. JOSEPH EASTMAN, of Indianapolis: I wish to remark with reference to the drainage-tube and dilating trocar, that Professor Martin, of Berlin, has been using the ordinary dressing forceps, forcing it through the vault of the vagina, seizing the drainage-tube, and drawing it up in that manner. I have in that way been using the Bozeman dressing forceps, simply sharpening their points.

I was much interested in the paper of Dr. Price. I believe, in a publication of mine, I made the statement that I would drain upon the slightest excuse. I still hold to that. As to the question of permanent drainage, Dr. Wylie, of New York, speaks of establishing permanent drainage. I do not know how that is to be done. In my experience, and that of others, I find that, in at least a week, nature has covered in the tube with plastic material. In the first ovariotomy by Dr. McDowell, he allowed the ligatures to hang out of the abdominal wound. I am not sure but that it is about as good drainage as we ever had or will have. It is good capillary drainage. In my experience in fifty-one cases, I have not had a hernia except in one case. That was where I had to leave the drainage-tube in over a week. It seems to me the key to the situation is in bringing the abdominal layers into exact

apposition. I am satisfied that we must not decide for either vaginal drainage or abdominal drainage exclusively.

Dr. E. E. MONTGOMERY, of Philadelphia: The members of the association are greatly indebted to Drs. Price and Cushing for their practical papers on a subject of the greatest importance to those practicing abdominal surgery. I take it, in the practice of this department, we are desirous of using no measures unnecessarily, and on the other hand of leaving undone nothing that is important for the relief and salvation of our patients. With this in view, it seems to me that it is exceedingly important that practical indications should be laid down for the treatment of such cases, to make sure the class of cases in which drainage is indicated and necessary, and outline those in which it is not required. In many cases the necessity of drainage may be obviated by the subsequent care of the patient. If we place the patient on a restricted diet, or diminish the amount of liquid, so that the pressure in the vessels will be decreased and they, instead of throwing out liquid will take it up, there will be less danger of peritoneal effusion. In the applications of the dressings, where we have reason to expect peritoneal effusion, if we apply pressure we will find the danger of effusion is lessened. Another important thing is the care of the drainage-tube, so that the secretions are not allowed to decompose in the peritoneal cavity. By the application around the drainage-tube of the rubber dam, a piece of rubber such as is used by the dentists, making a complete covering over the dressings, we can wash out the cavity without soiling them at all. The drainage-tube is objectionable where it is unnecessary, for the reason that it lessens the strength of the union in the wound. It is also for the reason that it increases the difficulty of keeping the cavity pure and sweet. There are cases, I think, in which vaginal drainage is preferable to the drainage from above.

Dr. H. O. MARCY, of Boston: There are two or three points in which I shall draw exceptions in the matter of detail to the gentleman who read the first paper. We certainly all understand that we want to get rid of deleterious, effete, poisonous material. The first question the operator places before himself is, that he does it by operative measures. If he is sure he does it, it is a gratuity to add the danger of the introduction of a tube which itself may carry in infection. If it is removed, I am sure he would agree with me that we have nothing to drain, because we have a healthy non-infective cavity. The question comes, Can we do this? If we are in doubt, Can drainage accomplish that which you desire? Unfortunately, we all have to answer that many times it signally fails when we have trusted to it. If we had an infectious tube, we would destroy the point of infection before we closed the wound. There is nothing better than to be certain that you follow back the infection to its very centre. If you have a doubt about the aseptic properties of the cavity, wash it freely with aseptic water. If you have not removed this the next question you ask is, Does the drainage-tube make your patient safer? The drainage-tube often fails. When the drainage-tube fails, then the only safety to your patient is reopening the cavity. I believe that, if we have to use drainage, we should drain in the direction of gravity and not against it; that is what drainage means if we understand it. I am strongly inclined to think favorably of vaginal drainage. I have designed a drainage-tube which I will be glad to present—two tubes lying in conjunction, with a diaphragm; with it you wash in either way, which I believe is of advantage.

Dr. ALBERT VANDER VEER, of Albany: I scarcely think there will be presented to us any subject of more importance than this of drainage in the pelvic cavity. It is with pleasure I refer to one man in this country, one working in the direction of drainage in pelvic abscess. Had he lived he would undoubtedly have carried the

subject much further along and nearer to perfection than has been done since his death. I refer to the late Dr. E. R. Peaslee. At one time his percentage of recoveries was greater than any other man's. He excelled Sir Spencer Wells in his percentage of recoveries. His theory was to drain in the direction that it is natural for the fluid to flow. In introducing the drainage-tube at the lower end of the abdominal wound, I believe it is well to put in the suture in such a way that it can be tightened as soon as the tube is removed. I can only call to mind two cases in seventy operations where I had hernia occurring. One was because the patient got up too soon. In closing up the wound, bring peritoneum in connection with peritoneum, fascia with fascia, skin with skin. They must be brought together carefully. We must select, according to the cases, the form of drainage.

Dr. PRICE, in concluding, said: I meant simply to discuss actual disease. I was not dealing with given cases. I have studied most carefully the works of Dr. Martin, Tait and others. When I consider the mortality of twelve in seventy-two for pelvic surgery, I must say that I do think Dr. Martin needs a little further experience in pelvic drainage. If you refer to Bantock and compare his mortality record, I think you will consider that it is wise to practice the drainage of Bantock, of Tait, and of Keith, and not that of Martin.

In regard to hernia, you can pick them out from a class of operators that make long incisions. An incision that is long enough to admit two fingers is quite sufficient. You can do anything in the pelvis with two fingers that you can do with the whole hand. The capillary drain I do not look upon as of very great importance. The frequency of cleaning the tube is of paramount importance. You cannot get along without a nurse with special training. A word with regard to the aspirator. I used it a few years ago; I have no need for it now. It is a very easy matter to keep a tube clean, sweet, and dry. I would call attention to eighty-four cases done in the alleys and courts, without carbolic acid or bichloride of mercury, with one death in eighty-four. The nurses were all trained to clean those tubes. I have had no experience with vaginal drainage; the other has served me well. The tube is a little sentinel to show when hæmorrhage occurs.

AFTERNOON SESSION.

Dr. WILLIAM H. MEYERS, of Fort Wayne, presented a paper on the "Treatment of Suppurative Peritonitis," in which he asserted that he knew of no reason why the same general principles should not apply to the largest serous sac in the body, where life is in danger from the irritant nature of its inflammatory contents, as holds good when pus has formed in the brain, in the pleural cavities, joints, or cellular tissue; namely, that all these conditions are amenable to surgical interference at the earliest possible moment after we have arrived at an exact diagnosis. He distinctly emphasized that he did not believe that peritonitis was ever idiopathic or spontaneous in its origin; nor that the peritoneum was ever the seat of independent inflammation, but that it was peculiarly liable to inflammation of a secondary character, the irritant proceeding from without, as in wounds, or from one of the organs lying underneath the membrane; or from injuries to the abdominal parieties, rupture of hydatid, ovarian, or other cysts, the bursting of an abscess, perforation from the diseases of the hollow viscera; these being the most common causes. Regarding ovariotomy as the parent of peritoneal surgery, he presented a résumé of a few cases in support of the idea advanced by Mr. Barker, where ovariotomy was performed during the progress of acute peritonitis, and quoted Mr. Wiltshire as saying that he was able to show, many years ago, that the presence of peritonitis is not always a bar to operations. On the contrary, it may be the chief indication of the necessity for operation, being itself due to

acute cystic changes, and subsiding only on their removal. Accepting this principle, he believed that attempts at radical cure might justifiably be made, in proper cases, even in the presence of peritonitis. Referring to treatment by the trocar and aspirator, he quoted from a letter from Professor Thomas Anandale, which is believed to be an account of the first authenticated case where the trocar and washing out of the abdominal cavity was resorted to as a curative measure in suppurative peritonitis.

Dr. E. E. MONTGOMERY, of Philadelphia, read a paper on "Larapatomy in Peritonitis," in which he said: The dread of disturbing the peritoneal cavity has been so great as to well justify the assertion of Wagner that he and his contemporaries had been nutured in the fear of the Lord and the peritoneum. Peritonitis varies in its phenomena according to the condition producing it. It is recognized that the disease, in the idiopathic form, can arise from exposure to cold and dampness, in which the exudation is limited and likely to be serous. In other forms, exudation is more likely to become purulent, or there is an early secretion of pus. The pus may be free, or become encysted.

The largest collections are more likely to occur in the acute disease, and especially in the puerperal and metastatic forms. According to Bamberger, the exudation, in its beginning, is fibrinous, but it is evident that there is a primary pus formation, as the cases quoted by Abercrombie and Kaiser show where pus was found after thirty-six to forty-eight hours of inflammation. The removal of pus is as imperatively indicated as when it occurs in pleural or articular cavities.

The presence of pus is indicated by fluctuation, dull percussion, attacks of chills, hectic, cessation of spontaneous pain, sensitiveness upon contact and movement. The diagnosis may be confirmed by puncture with a hypodermic or small aspirator needle. Pain is not always present in peritonitis, though pus may be present in large quantities. Non-purulent effusion may be removed by puncture, but suppuration positively indicates laparotomy, as it allows of thorough evacuation of the pus, complete cleansing of the abdominal cavity, separation of adhesions, the removal of exudation, and perfect drainage. It also permits of thorough examination, and may enable us to discover and remove the cause of the inflammation.

In perforative peritonitis, the operation should be done in all cases in which collapse has not already taken place, though the result will be more favorable in the cases of traumatic origin. In these, the patient is usually healthy, tissues of the viscus are in good condition, and sutures are readily borne, should resection be required.

The class of cases demanding early attention are those occurring about the region of the cæcum. These cases arise generally from perforation of the appendix. It has been stated that 34 per cent. die within three days. In severe cases, laparatomy should be performed at once; and when gangrenous or perforated, the appendix should be amputated and the stump sutured. Lateral incision is preferable to median.

In no form of peritonitis has laparatomy proven more valuable than in the tubercular. Its value was discovered by accident, the operation being done under mistaken diagnosis. The favorable result is attributed to the removal of the serum which serves as culture-fluid for the multiplication of the bacilli.

Incision, in these cases, is preferable to puncture, as ascites does not recur after the former, while it rapidly accumulates after the latter.

In conclusion, peritonitis should be regarded as a positive indication rather than a contra-indication for operation.

Death, in the cases of which we have spoken, is certain; we have seen that the operation may save the patient. Why hes-

itate to give the latter some chance of recovery?

Dr. HENRY O. MARCY: I consider it a privilege to rise and express my thanks to Dr. Montgomery. It is now nearly two years since I opened the abdomen in one case for exploration, because of a considerable thickened mass post uterine. The patient had been six months under observation and gradually became worse. The diagnosis had not by any means been certain. I do not suppose it had occurred to any of us that she had tuberculosis, but the exploration showed that the whole peritoneum was studded with those little masses which are so familiar to you all. There was in this instance no especial amount of serum. The abdominal cavity was somewhat carefully washed out with a sublimate solution. Before closing the cavity, I cut off a little portion and submitted it to Dr. Nelson, who made not only a careful microscopic study, but cultivated the bacilli by artificial process, so that there was no doubt about the condition. But, strange to me and to you, the patient from that moment began to improve and is now comparatively well.

Dr. CLARKE: Dr. Marcy invited me to see a case in which exploratory incision was done very late. Had it been done earlier I think it would have been successful. I have had an opportunity of seeing a good many such cases since, and I hope, and have encouragement to believe, that it is a feasible operation. Not long since, I saw a young girl who had evidence of phthisis and bacilli of the intestine, who, after a very small exploratory incision and draining off all the serum, seemed to get well in a short time. There was considerable serum in the case.

Dr. RICKETTS, of Cincinnati: The discussion of the treatment of peritonitis by abdominal section has not taken the stand here that I hoped for. It is a very important subject, and I feel that the death-rate of peritonitis is going to be greatly lessened in the next few years by abdominal section. The trouble in these cases is to have the general practitioner understand the gravity of these cases early enough. It is not always the abdominal surgeon who sees the case in the beginning. Many times a bad result is counted against the surgeon, not for any failure on his part, but by failure to recognize the case at the proper time. I feel that it is the duty of every abdominal surgeon to do what he can to get the general practitioner to understand when to call assistance in these cases. I think it is our duty to give them to understand the importance of early interference in these cases.

Dr. THOMAS OPIE, of Baltimore: A remark has brought to my remembrance a case—a single one in my experience—in which I was called in by two physicians; I think on the fourth day after labor. The patient was then in a very bad condition, in a very critical state. I asked immediately if there was not some traumatic origin of the difficulty. They insisted that, so far as they were able to judge, there was none. I insisted on a digital examination, and found there was a rent in the right side of the cervix, in which, by some very remarkable accident—possibly one of the blades of the forceps was not introduced into the os—the uterus was torn very severely. Four fingers of my hand would go into a deep rent. I said to the gentlemen that I thought she was almost moribund, but that it was worth while to try something; it was a certainty that death would ensue, but something was left and that was laparatomy. Appreciating the gravity of the situation, it was insisted by the friends that we should give this one chance. I opened the abdominal cavity and found a large quantity of serum and many adhesions. The patient died ten or twelve hours after the operation. I mention the case because it was one in which I think it was right to give her the one chance out of a hundred.

"The Relation of the Abdominal Surgeon to the Obstetrician and Gynæcolo-

gist," was the subject of a paper by Dr. A. VANDER VEER, of Albany. He said:

Of those who remember the crusade which was early made against ovariotomy, which was but the beginning of abdominal surgery, and who cherish the belief that the latter is not yet a distinct part of general surgery, the question is asked, "Why is it that special works are being published on abdominal surgery alone, and meeting with ready acceptance by the profession?" Abdominal surgery may be said now to be a part of the specialties of obstetrics and gynæcology. Has not the work of such men as the late Professors S. D. Gross, Tait, Parkes, Sands, Weir, Senn, Greig, Smith, Bull, and others now living, demonstrated the fact that abdominal surgery has become a specialty? If we inquire into the manner of its development, we find that it has been the outgrowth of work done by the general practitioner. The elder Gross once stated that his experience and observation had taught him that they made the best specialists who, having engaged for a number of years in general practice, finally confined themselves to that special department for which their studies, inclinations, and clinical observations and experiences had best fitted them. These words apply with peculiar reference and force to him who attends to practice as an abdominal surgeon. The operation for removal of a simple uncomplicated ovarian cyst is probably the easiest operation that occurs in all the range of the major operations in surgery; but when we come to the operation, embarrassed as it may be by all the complications now known to us, it becomes one of the most difficult of all operations. Notwithstanding all that has been done within a short time by obstetricians, gynæcologists, or abdominal surgeons, to advance abdominal surgery, we are yet at the halfway house on the road leading to complete success, for not yet is made clear the best manner of operating, the best place for the operation, or the best way of dealing with all the various complications. Our entire profession must yet be taught much that pertains to abdominal surgery, and it must to a great extent be done by men of creative genius. What we need is not the elaborate presentation of theories, but the offering of practical papers that will give facts, and the accumulated wisdom and experience of honest workers.

Specialism in society work and in journalism should be encouraged by the profession at large. As abdominal surgeons we should move carefully, but at the present time we must be active and on the alert to make use of the constantly increasing material that presents, and from which to draw our practical deductions. In this new society we have formed a combination that illustrates well that trite but true saying that in union there is strength. The work of the obstetrician is the most arduous, important, and responsible of any part of our profession. The obstetrician and abdominal surgeon should work in perfect harmony. The latter bears to the former much the same relation that the general surgeon does to the neurologist in his brain surgery. The obstetrician, like the neurologist, will make his diagnosis, but the surgeon will often be called upon to do the operation. The work of the abdominal surgeon will necessarily lead him into the field of gynæcological practice—that is, the major portion, not the minor part, of gynæcology. There are many good gynæcologists who are successful in everything that pertains to their specialty aside from doing an abdominal section, and this they assign to some one else. I believe it requires years of the hardest study and effort to become a thorough abdominal surgeon; the number must ever be somewhat limited.

Finally, is it not a fact that there is some danger that abdominal section may be carried too far if made too much of a specialty? Have we not in this society the conservative combination?

Dr. S. C. GORDON, of Portland: I hardly know how we can discuss a paper like this except to assent to what has been

said. The paper has certainly covered the ground. A discussion, in order to be interesting, must take a departure from the subject discussed. Abdominal surgery in my opinion is now taking quite a different turn from what it formerly did. Formerly we believed that everything of this nature must be done in a special hospital, with special accommodations. My own experience justifies me in saying that, while we must take every possible precaution, we must not allow a patient to die because we can not remove her to a special hospital. The question of special hospitals is no longer a sine qua non.

Professor W. H. WATHEN, of Louisville, read a paper on "The Surgical Treatment for Lacerations of the Perineum and the Pelvic Floor." He spoke especially of the surgical treatment of lacerations or injuries of the muscular and aponeurotic structures that form the floor of the pelvis. He said there is probably no other subject in gynæcology about which so much has been written that is of no real value, and that a relatively simple operation had been made to appear so complicated that it is seldom correctly performed.

He said that the muscles and the fascia in the perineum give it strength, and, when they are lacerated, no operation that does not primarily tend to reunite the torn ends is logical, or will be followed by permanently good results. We may have prolapsus of the uterus, with rectocele and cystocele, resulting from subcutaneous rupture of these structures, with no laceration or injury of the mucous membrane or other parts of the perineum. This condition is usually not diagnosticated by the attending physicians, and the woman is subjected to various plans of treatment to hold the parts in position and relieve the annoyance from pressure, weight, etc., all of which give but little relief; nor can she recover, except by an operation to bring together and reunite the torn ends of the muscles and fascia.

Dr. HENRY O. MARCY, of Boston, read a paper upon "The Perineum, its Anatomy, Physiology, and Methods of Restoration after Injury." He reviewed carefully the teachings of the text-books and the views held by various authors whose writings are found scattered through the medical journals. These he supplemented by a series of photographs of dissections of his own work, from which he verified, in large measure, the teachings of Savage. He especially emphasized the importance of a better general knowledge of the anatomy of the pelvic structures, and pointed out where the teachings of many of the text-books are in error in important particulars

SECOND DAY—MORNING SESSION.

Dr. W. W. POTTER, of Buffalo, reported a case of "Double Ovariotomy during Pregnancy; Subsequent Delivery at Term."

Dr. VANDER VEER said: Dr. Potter has presented just that kind and class of cases we ought to have given us. This is an exceedingly rare case. I have looked up the subject somewhat, and find ninety-six cases reported where the operation has been done during pregnancy—not *double* ovariotomy. It is an operation perfectly justifiable. The condition of pregnancy does not seem to interfere very much with abdominal operations. The case he referred to I operated on about three months ago. I had a letter from the physician in charge saying that she is progressing well, but I do not care to have her case go on record yet.

Dr. E. E. MONTGOMERY: I was very much interested in this case of Dr. Potter's. Two years ago I read a paper on Ovariotomy during Pregnancy. I was able to find a record of sixty cases, and showed that pregnancy had very little influence upon the morality of the operation. In all those, there was not one in which the operation was done upon both ovaries. In the report of Dr. Mundé, I think, it was claimed that a woman was not likely to go through gestation with both ovaries removed. This paper of Dr. Potter shows

that this belief is erroneous. I had thought, until Dr. Potter made this report, that my case was the first.

Dr. MAXWELL, of Keokuk: There is one other point that is interesting—that is, that the patient operated upon nursed her child after gestation had been completed; another fact, that lactation is not a substitute for menstruation.

Dr. BYRON STANTON, of Cincinnati, read a paper on the subject of "Induced Premature Labor." He referred to the arguments which have been urged against this procedure, based upon the ground of its mortality and usefulness—arguments that would apply with equal force against all obstetric operations. He thought that, like the obstetric forceps and version, it would tend much to do away with craniotomy and Cæsarean section. He thought that the arguments that the mother is exposed to some risks that she does not encounter at term, such as imperfect development of the uterus, incompleteness of the changes which nature effects in the maternal passages during pregnancy, the frequently delayed detachment of the placenta, more frequent malpresentations, etc., were more than met by the advantages gained by the smaller size of the child, and more yielding and compressible head, and consequently shorter and safer delivery.

He also referred to the arguments against induction of labor, on account of the great infant mortality, quoting some recent writers as holding that such intervention is so dangerous that the operation should give place to Cæsarean section—an operation that has rapidly reduced its mortality. He thought the conclusion not justified by statistics.

The points involved in determining the question as to the resort to the operation are:

1. Whether the case is one in which delivery at term will involve the death of the infant, and subject the mother to much danger and suffering, and yet permit delivery at seven or eight months;

2. Whether the conditions are such that the life of the mother will be imperiled by continuance of pregnancy to full period of gestation, by hæmorrhage, or some intercurrent disease, or by aggravation of some chronic ailment which can be averted or removed by earlier delivery; and,

3. Whether there is a history of infant fatality in several successive pregnancies at some regular time after the age of viability.

He considered the methods of inducing labor, of which there are many.

Medicines acting through the general system were condemned. All oxytocics are unsafe for inducing labor, so also are those methods that act by reflex irritation. Some method acting directly on the uterus is to be preferred, and only those are to be thought of that respect the integrity of the membranes. Electricity in its various forms has proved disappointing. The hopes that were at one time entertained have not been borne out by experience.

Kiwisch's, Kluge's, Cohen's, Hamilton's, Lehman's, Schiele's, Krause's, and other methods were described, preference being expressed for Krause's method—the introduction and retention of a flexible bougie between the membranes and uterine walls until uterine action is excited.

In placenta previa he would use a tampon in the vagina, or a Barnes dilator in the cervix, until sufficient dilatation is effected to permit version.

All methods that bring on uterine action by evacuation of the liquor amnii are to be avoided.

After labor, the child demands especial attention. It must be kept continuously warm by artificial heat. The bath usually given to the new-born *must be omitted.* Early feeding must be resorted to.

Dr. THOMAS OPIE: I think the attention of physicians ought to be called to the importance of the principle of taking advantage of that period of intra-uterine life in which the sutures are yet wide and the bones not well developed, and in which

we can have this very desirable condition of molding as the head is passing through the canal. It is remarkable the ingenuity with which nature molds the descending head to conform to the channel through which it must pass, but this is a process which requires an amount of time proportionate to the difficulties to be overcome. If the contraction is great, the time must be lengthened. If the contraction is too great, then delivery must be impossible if the patient has gone on to full term. I wish to speak of great importance of taking advantage of the undeveloped condition of the head of the child. We will find the shape of the head indicating the direction of the force, and, so distinctly pointing out what has been the difficulty and cause of delay. We have to deal with two distinct classes of cases. In one class, after inducing labor, we can wait for Nature to carry it through, but, in cases of eclampsia and placenta previa, delivery must be accomplished at once. Still we should take advantage of the condition of the head, for, with the forceps upon it, we find it still qualified to adapt itself to the canal, but in a better way than at full term. In cases of eclampsia, I think many lives are lost on account of delay. It has not been my experience that the operation of dilating the uterus is either difficult or dangerous. The introduction of hard-rubber dilators will furnish the beginnings. It will soon be found that, after introducing one after the other, the contractions begin, whereas, with the bougie, it might be delayed two or three days. I merely introduce these as a forerunner of Molesworth's or Barnes' dilator, until I can get in two fingers; and then I am able to introduce Taylor's narrow-blade forceps, and with these dilate the os sufficiently to apply the Tarnier forceps.

I would emphasize what has been said with reference to the question of ergot. There is one point about ergot which should be thoroughly established in the minds of the whole profession—that there is great danger to the child from its tonic action, and, as far as the mother is concerned, we start a force that we can not control.

Dr. A. L. SMITH, of Montreal: I wish to urge the induction of premature labor in bad cases of vomiting in pregnancy. I have a record of eighty cases of death in this comparatively simple condition. I know of one large family of beautiful girls in Montreal, every one of whom was born at seven months.

In a paper entitled, "Is the Frequent Use of Forceps Abusive?" Dr. THOMAS OPIE, of Baltimore, said: There is a remarkable unanimity of opinion in the teaching of recent text-books, medical journals, and medical societies on this subject.

They favor the more frequent use of forceps, and condemn the so-called expectant management of labor. The axiom "meddlesome midwifery" has beaten a retreat before the clamor for the forceps.

The name of forceps points to its most striking characteristic, its prehensile power. Three distinct eras may be traced in this branch of medicine, having their pivotal influence in the forceps.

1. The introduction of the original forceps in 1700; 2, the important invention by Levret of the pelvic curve in 1747; and 3, when in our own times, 1877, Tarnier invented the traction-rod attachments to the forceps.

Baudelocque arranged methodically the pelvic positions and presentations in 1791. Prior to that time the sovereign powers of the forceps were greatly abused. Their introduction was a matter of haphazard and convenience. Even in the days of Ramsbotham there was a bitter controversy as to which was preferable, forceps or craniotomy.

A recent writer says "the forceps is simple in construction, easy of application, wonderful in power."

The successive stages of their development have, on the contrary, made them far less simple in construction; they have a

wider range of application and wonderful powers for life-destroying as well as life-saving.

All surgical operations are dangerous; it is equally true that elements of danger lurk about all cases of artificial labor.

To substitute traction for contraction; to introduce and use instruments in the genital tract; indeed, to substitute art for nature's peculiar and inimitable methods, is always dangerous.

The most unanswerable argument against frequent use of forceps comes from the gynæcologists. Good surgeons are relatively few, and delicate and dangerous operations in that branch are relegated to specialists among them; but most practitioners think themselves able to cope with any forceps case. If skill in the use of forceps did not exist prior to Baudelocque's classification, how can we accord this virtue to operators with the forceps in these days, who are ignorant of the fundamental principles and admirable system upon which the present science of obstetrics rests?

The opportunities for the student of obstetrics are meagre; and granting he is thorough in the theory of this department, he forgets it before he is intrusted with a practice. No wonder if he makes a medium-rate obstetrician, and sneers at the mechanism of labor.

To determine between the high forceps operation and version, to diagnosticate or rectify position above or at the brim, to apply the forceps accurately and conduct safely the little passenger through the passageway, are among the great achievements of medical science.

The high forceps operation is a critical one, and the operator should be chosen with as much care as for an ovariotomy.

The low operation is not so simple as to be left to "any tyro."

For practical purposes, it answers to designate all kinds of forceps, in the order of their seniority of invention, as follows: the straight (Chamberlyn), curved (Levret), and traction-rod (Tarnier).

It is high time to turn a deaf ear to the many names of individuals attached to forceps because of various modifications of lock, blades, or handles. They obscure the horizon of the subject; they distract attention and confuse the object, which, like that of the practice of medicine in all its departments, is life-saving, curative.

There is but little need for straight forceps. The traction-rod forceps alone serves our purposes with satisfaction, at and above the superior strait.

The welding and unification of the traction-rod and curved forceps in Tarnier's latest style well-nigh disarms criticism. It is a great achievement; one on which we may congratulate this age.

Think of the struggle, and pity the sufferings of the man, woman, and child as the operator toils away with the straight forceps at the inlet. The pelvic curve added would only qualify, not remedy, the situation.

Still another modification, and science has triumphed. The traction-rods, with relative ease and far less force, pilot the head through the upper narrows, and thence into the safer region of the low operation.

If we could only persuade operators of the salvation of traction-rods covering all the indications for traction at the superior strait; of making traction, during the pains, rythmical, direct, slow; of supplementing, not superseding, nature; of utilizing all the vis-a-tergo and only just enough of his power to bring the combined forces to the normal, and that all above that is abuse.

If we could get them to be careful, to halt, prospect and protect the sphincters of the uterus and vagina, and to beware of rapidly unloading the organ, we would have a reform that would be as life-saving stations all along the passageway.

I am fully convinced of the ability of the forceps to help. I protest that they should not be used regardless of the factors of delay.

I plead for their judicious use.

As to the indication that the os should always be dilated or dilatable, judgment often goes to protest.

About two years ago, I was in attendance upon a most tedious, nervous, and impatient primipara, in whom the os was only three-quarters dilated; after a boisterous struggle of two nights and two days, slowly, almost imperceptibly, the dilatation increased. The patient's-qualifications for abuse, however, grew more rapidly; I came in for a large share of it. She demanded chloroform and instrumental aid; the husband seconded her claim. The traction-rod forceps was applied; she was delivered in two hours under chloroform. A febrile trouble and tardy convalescence ensued; some months afterward she became the patient of a clever gynæcologist. His operation told the tale of the "blundering obstetrician." I have never had an opportunity since to call the patient to an account.

One of the most important requisites for a good obstetrician is "to know how to wait and do nothing." In the first stage he must wait a long time, especially in primiparæ, before using forceps; indeed, he is not warranted in resorting to it, except the mother or child is in jeopardy.

For the most frequent use of forceps is in the second stage, and we are told "any tyro" can perform this operation. Nature can generally do it better and safer, if not so quickly. Time and patience can not be too much extolled as virtues during the whole of labor.

Let the attendant occupy the position of "watchful expectancy." Remove reflex disturbance, sustain by proper food, guard against fatigue, secure rest, assure and cheer, utilize the simpler methods of assistance; let nature do all she can before we resort to forcible measures. I have lately limited the number of my forceps application by manual pressure, according to the plan advised by Kristeller of Berlin.

This, and other manual helps, are more in accord with nature's laws, and should be made use of. Instead of using forceps to curtail the sufferings of labor, we had better consider the very great efficacy of morphia, chloroform, and chloral.

As an isolated indication, it is doubtful whether pain ever warrants forceps use, nor would such cases necessarily end with less suffering after immediate delivery.

It is a common occurrence for women to demand that the accoucheur shall do something to help the physiological phenomena of labor. Dr. Robert Barnes denounced this as an old and bad practice.

Anæsthesia is the best treatment for cases of excessive nervousness and emotionalism in labor, not the forceps, as has been advised. Chloroform during the pains often makes labor of this sort more normal.

The nervous element is often misleading; it is not always the patient who is most noisy who suffers most, nor is it safe to be influenced by her cries for more chloroform or the forceps.

The loss of time by an accoucheur is not to be accepted as a warrant for resorting to instrumental delivery.

The forceps is a life-saving instrument for both mother and child, whether we are dealing with the first or second stage of labor, provided it is used judiciously and skillfully.

There is much difficulty in obtaining exact statistics as to the frequency with which the forceps is used. The figures vary with the country and with the operator. Ploss' tables show a wide difference in frequency of application in German, Swiss, and Russian maternities. In an aggregate of 33,054 labors, the forceps was applied 1,975 times, or one in thirty applications.

Ploss' tables for England make the least number of applications for any operator, as one in 3,878. The operator with the greatest relative number was one in 7.8. Jacquemier's tables give 20,517 labors

and ninety-six forceps cases, or one in 214.

These tables embrace a period from 1792 to 1862. Those were the days of the swaddling infancy of obstetric knowledge, when method was just inaugurated by Baudelocque. Still they are useful in the light of history, in setting forth the wide range of opinion as to the frequent use of the forceps in those days.

Galabin says no one would now recommend so sparingly a use of forceps as one in 200. He says that the statistics of St. Thomas' Lying-in Charity appear to show that a forceps rate of one in sixteen to one in eighteen deliveries does not endanger the mothers; but wider statistics are desired.

The Maternity Hospital, Philadelphia, shows the number of forceps applications in 1886 to have been about one in eight.

The Columbia Hospital, Washington, D. C., has had an average of about one in twenty. At the Maryland Maternity Hospital, Baltimore, we have used forceps 142 times in 1,495 deliveries, or one in 9.4.

The number of forceps applications at Vienna Lying-in Asylum during the past year was 2 per cent.

In my private practice, including consultation work, the average has been one in 10.5. I have found by inquiry of many practitioners that their average in private practice ranges from one in four deliveries to one in twenty-five.

It is to be deprecated that there is not a greater tendency to specialism in obstetrics. No man, ignorant of the mechanism of labor, and who does not know the rules for using the forceps, should ever undertake a high forceps operation. That clumsy, untutored, and unskilled hands do harm with the forceps even at the lower strait cannot be denied. As long as this unfitness and want of training for obstetric operations exists, it will be humane to withhold our advocacy of a still more frequent use of forceps.

Nature has been defined as "the good will of God expressed in facts." We should crave her facts and imitate her. We will be adverse to substituting art for nature, so long as man is inferior to his Maker, except we act because of danger to mother or child.

We will not detain you with the enumeration of the many accidents and injuries which befall the mother and child at the hands of the forceps. Suffice it to say, they embrace a large part of every recent work on gynæcology.

We sadly need statistics to settle the wide differences among obstetric operators with the forceps as to the frequency with which they may be used. Our judgment is that the average of one in fifteen or sixteen applications of forceps, as suggested by Dr. Galabin, is a fair one. The pendulum, having properly left the position of too great infrequency, has gone to an unwarranted extremè in point of frequency.

The obstetrician would do well to be found in the good company of the physician in the prevention of disease, the surgeon in his conservatism, and in line with the modern sanitarian.

Dr. JOSEPH PRICE, of Philadelphia: For years I condemned the use of forceps in unqualified language. During my hospital experience I singled out 300 cases of labor, in twenty-five of which forceps had been used in previous labors. In none of the twenty-five cases could I find the slightest indication for the use of forceps. I know that in skilled, trained hands it is a valuable instrument. I am glad the author has advocated the Tarnier forceps, and has called attention to the Taylor narrow-blade forceps. In one case—a very ugly patient—in five successive labors evisceration had been performed. She finally agreed to submit to induced labor, and thereafter three living children were delivered with the traction-rod and Sims' forceps. The Sims forceps have a great advantage in the greater diameter of the blade. I have gone to three series of 100 cases without taking my forceps out of the

bag. In a discussion on the use and abuse of the forceps in our obstetrical society, one man admitted that he could not afford to attend poor women for five or ten dollars and not use forceps. It was five or six months before he came back to the society, so thoroughly was he rebuked.

Dr. FRANKLIN TOWNSEND, of Albany: It is important to bear in mind that in labor the first stage is governed by the sympathetic nervous system ; in the second stage, by the cerebro-spinal system. I do not believe the second stage should be allowed to continue longer than four hours. The exhaustion due to the strain on the cerebro-spinal nervous system is such as to warrant a speedy termination of labor.

Dr. J. H. SCARFF, of Baltimore, reported a case of "Intraperitoneal Hematocele with Suppuration." A saleswoman, aged twenty-five years, was injured by the falling of a box from an upper shelf in a store, striking her upon the left side of the abdomen. Inflammation with subsequent exudation ensued, after the lapse of some months after the injury. During the progress of the case an aspirator needle was inserted, and a pistonful of disintegrated blood secured. About six months afterwards he performed laparatomy and removed a large basinful of suppurating clots. The patient made a speedy and good recovery.

He summarized the points in the case as follows :

1. Pelvic inflammation and exudation, simulating true pelvic tumor, resultant from an injury.

2. Rupture of a blood-vessel in the peritoneal cavity while on duty subsequently in a store, and formation of an intraperitoneal hematocele.

3. Rapid suppuration of blood clots due, probably, to infection by the aspirator needle.

4. The extent of the provisional sac for the retention of pus in the peritoneal cavity is noteworthy.

THIRD DAY—MORNING SESSION.

Dr. THOMAS J. MAXWELL, of Keokuk, presented a careful résumé on the subject of "The Diagnosis and Treatment of Uterine Fibroids," including the pathology and causation of the disease. He dwelt upon the difficulties of diagnosis, and called attention to the liability of its being complicated by co-existing retro-deviations of the womb. He gave his own experience narrating his cases, and pronounced in favor of ergot, electricity, and the knife, as affording the rational methods of management of uterine fibroids.

HAMPTON E. HILL, of Saco, reported "An Unusual Case of Subserous Uterine Fibroid—Operation." The tumor measured in length sixteen inches ; in width, fifteen inches ; in thickness, ten and one-half inches. The weight was forty-seven pounds.

Dr. EDWARD J. ILL, of Newark, read a paper on "Desmoid (Fibroid) Tumors of the Abdominal Walls." He cited two cases, in one of which one hundred square centimetres of peritoneum were removed. In both cases the peritoneal cavity was opened. One case was operated upon by the excellent method of Sänger. Both cases recovered. The writer then spoke at length of the anatomy, pathology, etiology, symptomatology, diagnosis, and treatment of these rare forms of tumors. He drew especial attention to the symptoms produced by the contraction of the abdominal muscles on the tumors. He dwelt at length upon the differential diagnosis between this form of tumor and enlarged spleen, enlarged kidney, subcutaneous or subperitoneal tumors, uterine fibroids, solid tumors of the ovary and round ligament, adherent displaced kidneys, cyst of the urachus, dermoids of the abdominal walls, etc.

The prognosis of true desmoid is good. He has collected twelve cases of this form of tumor occurring in the United States. Ten of these occurred in females between

the ages of twenty-three and forty-one years. In five of these cases, the origin of the tumor was given as the fascia transversalis. In six cases, the tumor was so closely adherent to the peritoneum that it became necessary to open the peritoneal cavity in removing them. In two of these, excision of a large portion of the peritoneum became a necessity.

Dr. CHARLES A. L. REED, of Cincinnati, presented a paper on "Fibroid Tumors of the Abdominal Wall." He noted the dearth of American and English literature on tumors of this character. After accumulating his data, however, it became apparent that, to dispose of the entire topic, it would be necessary to discuss (*a*) fibromata, (*b*) lipomata, (*c*) myxo-lipomata, (*d*) cysto-carcinomata, (*e*) neuromata, and (*f*) hydatid cysts. A discussion of these subtopics, however cursory, would result in the production of an essay too voluminous for the occasion. As a consequence, and in consideration of the fact that his own observations had been limited to five cases of tumor of the abdominal wall, all of them fibroids, he determined it expedient to restrict his paper to a discussion of that variety. He considered the subject under the following heads: History, etiology, pathological anatomy, symptoms, development, influence of pregnancy on the nutrition of these growths, duration, prognosis, diagnosis, and treatment. He presented the subject of treatment under three heads —exploratory incision, total extirpation, and electrolosis—reporting his five cases in detail. The conclusions to which he had been forced by a study of fibroids of the abdominal wall, and by his experience in their treatment, were as follows: *First*, fibroids of the abdominal wall, however small, benign or indolent, are liable to take on active growth; *second*, when small, their anatomical relations are unimportant and their extirpation can be accomplished without serious risk to the patient, and should be advised; *third*, when permitted to grow large, their anatomical relations become very important, and their extirpation can be accomplished but with hazard to the patient; *fourth*, when in cases of large tumor, extirpation should be undertaken only where the exploratory incision demonstrated its feasibility; *fifth*, there should be no hesitancy in abandoning an operation when exploratory incision has shown it to be dangerous, because the primary incision may be of benefit to the tumor; *sixth*, in cases of manifestly deep-seated tumors with extensive peritoneal attachment, electro-puncture should be tried before extirpation is undertaken.

Professor GEORGE H. ROHÉ, of Baltimore, read a paper on "Diseases of the Skin, Associated with Sexual Disorders in the Female."

Dr. FRANKLIN TOWNSEND, Albany, presented the subject of

EXTRA-UTERINE PREGNANCY: ITS PATHOLOGY.

Much of interest has been already published upon the subject of extra-uterine pregnancy, both of a theoretical, as well as of a practical, nature, but reference to results from broad studies in comparative anatomy, is but scanty. In tracing out pathological conditions, we should, of necessity, refer to histology and physiology, for without these scientific aids to our study, we lose sight of the finer shades of beginning morbid processes from absolutely normal ones. We should begin our study of the pathology of ectopic gestation by comprehending the physiological functions of the organs most intimately involved. The pathological processes following may then, I think, be more distinctly and definitely traced. Most authorities are agreed that the functions of the Fallopian tubes are, first, to transmit the ovum from the ovary to the uterus, and, second, to permit the passage of the spermatozoa from the uterus in the direction of the ovary. There are a few, and the best of authorities, who differ from this view.

Of the *Physiology of Impregnation of the*

Ovum, he said: The seat of contact between ovum and spermatozoon has not yet been determined with absolute certainty. Many of the best authorities differ in their conclusions upon this subject. Coste's observations seem to prove that fecundation is almost always effected, either upon the ovary, or in the part of the tube nearest the fimbriated extremity, inasmuch as he maintains that the ovule spoils very quickly when it enters the tube without previous fecundation. Regarding the functions of the tube and ovaries, Mr. Tait has proven, conclusively, that ovulation can and does take place before, during, and even after, menstruation ceases; also, that the changes in the ovary at puberty are simply vascular, and that those in the tubes at this period are vascular, muscular, and epithelial, and that the change of greatest importance is in the functional movement of those accessory organs. Ovulation, then, and menstruation are necessarily co-incident. If, then, ovulation continues intermenstrually when the tubes are quiescent, what becomes of the ovum when the ovisac ruptures? Mr. Tait says: "I believe that the ovum falls into and perishes in the peritoneal cavity in by far the greater number of cases, and that the passage of it into the uterus occurs only in a small minority of the ova produced."

Accepting, then, the views of the majority of the authorities, that fecundation usually takes place either in the tubes, or on the surface of the ovary, or even in the Graafian follicle, or possibly, as has been intimated by Parry, in the peritoneal cavity, and granting the admirable stand taken by Tait, it seems that, *first*, fecundation of the ovum takes place more frequently than is supposed. *Second*, that this being the fact, many sterile women, that is objectively sterile, who never complain of pain or ache, who ovulate and menstruate with greatest nicety and regularity, and whose general health is perfect, may frequently have fecundated ova, which, like non-fecundated ova, may drop into the peritoneal cavity and perish, because the soil there is unpropitious for their development. *Third*, that occasionally, but rarely, this same peritoneal soil, if permitted to use such a term, does present a favorable site for the development of the fecundated ovum, and what is called "primary abdominal pregnancy" results. *Fourth*, this propitious site may be due to the old peritoneal inflammatory troubles, which may be so slight, indeed, as to have never given rise to suspicion of their existence. Such nesting spots in the peritoneum for the development of the young fecundated ovum, though occurring not so frequently as those inflammatory changes in the tubes, causing desquamation of the ciliated epithelium, and thereby tubal pregnancy, as Mr. Tait so ably advocates, are, nevertheless, a factor of causation of the so-called "primary abdominal pregnancy."

Ovarian Pregnancy.—So long ago as the latter part of the seventeenth century, St. Maurice demonstrated a case of ovarian pregnancy. A number of cases of this very rare condition are now on record. Rupture of the sac takes place early, though when the sac walls are reinforced by inflammatory adhesions to the peritoneal coverings of adjacent viscera, gestation at full term may be reached.

Abdominal Pregnancy.—As has been shown, fecundated ova frequently drop into the abdominal cavity and perish. Occasionally it happens that their growth may continue for an indefinite period. The pathological changes occurring in this form of primary abdominal pregnancy must be distinguished from those that take place in what is termed "secondary." In the one instance we have so minute, soft, fragile, and delicate a corpuscle deposited in the peritoneal cavity that one could not well imagine any grave inflammatory results accruing from its immediate presence. This being the case, then, the contiguous abdominal organs will not be injured by its ulterior development. On the other hand, in the secondary form of intra-peri-

toneal pregnancy, we have a voluminous product of conception suddenly thrust upon the peritoeum, accompanied by large quantities of blood. Here the ovum acts the part of a foreign body, soon determining an acute inflammatory process about it, which possibly may form a cyst-wall, made up almost wholly of plastic lymph, which completely isolates it from the rest of the peritoneal cavity. If the fœtal cyst ruptures, and the contents escape from the amniotic cavity into the midst of the intestinal mass, a renewal of the inflammation occurs, and the cyst just described forms around it. As a rule, the fœtus perishes at or soon after the time of rupture. With the death of the child, it may be converted into a lithopedion; or, through the blood supply of the connective tissue, it may be preserved for years in its soft integrity.

In all forms of ectopic gestation, the connection between the ovum and the abnormal surface upon which it is engrafted is established by a vital adhesion between the chorionic villi and the tissues with which they come in contact.

The Uterus in Ectopic Gestation.—From researches made by Clark, Oldham, Virchow, and others, it would seem fair to conclude that the uterus is enlarged, even in the early stages of ectopic gestation. A decidua forms in its cavity, which is usually expelled during the early stages of gestation en masse, with pain and symptoms of abortion, or it may be discharged in shreds and pieces without symptoms.

EXTRA-UTERINE PREGNANCY: ITS DIAGNOSIS.

Dr. JOSEPH PRICE, of Philadelphia: The literature of extra-uterine pregnancy is scattered through a vast number of periodicals, and consists for the most part of descriptions of cases occurring in the practice of the writers. The most valuable works are those of Mr. Lawson Tait and Dr. John S. Parry. Mr. Tait is undoubtedly correct in his proposition that all extra-uterine pregnancies are primarily tubal, and that all the so-called varieties depend upon the location of the ovum in the tube and the location of the point of rupture of the tube. The subject may be divided into three classes—*first*, extra-uterine pregnancy before the rupture of the tube; *second*, at the time of rupture of the tube; and *third*, after the rupture of the tube. Rupture of the tube is not synonymous with rupture of the fœtal sac, though they generally occur at the same time. The diagnosis of extra-uterine pregnancy before the rupture of the tube is rarely made, and when it is made is of necessity not positive, because the same set of symptoms may arise from a number of pathological conditions. The symptoms they present are as follows: First, partial or complete cessation of menstruation for one or more periods, generally accompanied by other rational symptoms of pregnancy. Second, pain which is peculiar, being generalty severe, paroxysmal, and long-continued; a sickening pelvic pain which is neither cramp-like nor colicky. These pains, probably caused by the distention of the tube, are like to subside for a time, only to return. Third, the appearance of uterine hæmorrhage, which is again peculiar in that it is usually irregular both as to time and quantity; generally lighter in color than the normal discharge and containing shreds of tissue, which are portions of the decidua vera. The general condition of the vagina and cervix may or may not correspond to normal pregnancy. The uterus is generally enlarged and pushed out of place by a tender or exceedingly painful cystic mass, occupying the position of one or the other of the tubes, and freely movable. A differential diagnosis is extremely uncertain. Care must be taken not to hastily exclude pregnancy, because of the apparent return of the catamenia, nor to conclude that miscarriage has taken place on account of the presence of tissue in the discharge. When the fœtus and placenta die before the rupture of the tube, the difficulty of

diagnosis is practically insurmountable. These symptoms continue as the pregnancy advances. The tumor, as it increases in size, causes additional symptoms by pressure on the bladder and rectum. Rupture takes place almost always between the eighth and fourteenth week of pregnancy; in a majority of cases before the twelfth week. Now the symptoms vary somewhat, according to point of rupture in the tube, whether into the peritoneal cavity or below it.

EXTRA-UTERINE PREGNANCY: ITS TREATMENT.

Dr. E. E. MONTGOMERY, of Philadelphia, said, that when asked to take part, he chose the subject of the surgical treatment. While his subsequent study had not induced him to depreciate the value of surgery, it had led him to appreciate more highly than he had before done the possibilities of treatment by electricity.

Treatment must depend upon the form with which we are confronted.

Electricity affords an agent which can be relied upon for the destruction of fœtal life. Its efficacy is questioned, but we cannot accept the dicta of men who are ignorant of the manner in which it is used, or of those who condemn it without a trial. An agent which is capable of destroying the life of mice and insects by passing a current through a vessel of water in which they are placed, should be effective in destroying life when brought in close contact with the fœtal envelope through vagina or rectum, as may be most convenient. Its method of action is not electrolytic; the proper method of use is not by puncture. Those doubting its efficacy, question the diagnosis; but it is improbable that all of the cases quoted are cases of mistaken diagnosis. An agent that will dispel conditions affording the subjective and objective symptoms of ectopic gestation is worthy of further consideration.

In conclusion, he recommended the following plans of procedure:

1. In every form of ectopic gestation, prior to the fourth month, the destruction of life by electricity (Faradic current).

2. Between the fourth and sixth months, destruction of life by electricity, and, some weeks later, laparatomy.

3. In rupture, immediate laparatomy, with removal of sac, contents, and the effused blood.

4. In cases that have passed the sixth month, wait until viability is well established, and perform laparatomy, observing every precaution that separation of the placenta does not occur, close the sac above, and drain through the vagina.

5. In case of death of fœtus, it should be removed by laparatomy a few weeks later.

6. Where the fœtus has become macerated and abcess has formed, its sinus should be enlarged and the fœtal residue removed.

Dr. A. VANDER VEER, Albany, said: Much of the literature upon ectopic gestation is very vague. The monograph of Sir Spencer Wells on "Abdominal Tumors" is especially valuable for its clear history of cases, and the concise, yet minute, description of the surgical devices employed.

The abdominal surgeon needs to be perfectly familiar with the points of diagnosis, especially in the early stages.

There is a class of cases in which a diagnosis can be made before rupture, and by the tenth week. Another class gives rise to no symptoms other than those of normal pregnancy before the rupture takes place, as in the thirty-five cases of Tait and the eighteen cases found post-mortem by Formad, of Philadelphia. The first class are such patients as have been under the eye of the gynæcologist, perhaps, for years. He will be conversant with the pelvic conditions and relations. The use of electricity as a fœticidal agent is largely an American method of treatment. The strongest objection to its use seems to be that untoward results follow the operation. The operation for the removal of the product of an ectopic gestation before rupture has taken place is to the surgeon an ideal method.

There remains no foreign body to be disposed of, and no serious after-effects are to be feared. Veit records seven successful cases with no failures. When the symptoms show that rupture has taken place, there can be no doubt that an immediate abdominal section is the only proper thing to do.

When ectopic gestation goes safely beyond the fourth month, danger of rupture is small.

The general tendency of operators is, then, to await spurious labor. Shall we then try to remove a living child, or wait until the placental circulation has ceased? The tendency of operators is growing more and more toward primary laparatomy. In view of our improved technique in doing the operation, I believe we are justified in urging primary laparatomy. In primary laparatomy, the placenta ought to be removed either by ligation or exsection.

Dr. A. LAPTHORN SMITH, of Montreal, read a paper on "Some Minute but Important Details in the Management of the Continuous Current in Gynæcology."

The following officers were elected for the ensuing year: President, Dr. Wm. H. Taylor, Cincinnati; Vice-Presidents, Dr. E. E. Montgomery, Philadelphia, and Dr. J. Henry Carstens, Detroit; Secretary, Dr. William Warren Potter, Buffalo; Treasurer, Dr. X. O. Werder, Pittsburgh; Executive Council, Dr. Thomas Opie, Baltimore; Dr. Clinton Cushing, San Francisco; Dr. Melancthon Storrs, Hartford, and Dr. Byron Stanton, Cincinnati.

The next meeting will be held in Cincinnati.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

The annual meeting was held at St. Louis, September 25, 26, 27, twelve States being represented.

Mayor DAVID R. FRANCIS welcomed the visitors on behalf of the city.

From the standpoint of morality, society, and religion, the doctors of the country went far toward molding the public mind; in the last of these three they were, perhaps, not always sound, and were sometimes too materialistic and unorthodox, but were always sincere.

The Mayor hoped and believed that the visitors would be so well entertained while in the city that they would not only prolong their stay, but would return again, and often. The conclusion of his remarks was a reiteration of his more than hearty welcome to the city on the part of her people.

Professor LOUIS CH. BOISLINIERE, welcomed them on behalf of the medical profession of St. Louis, and said:

In the near future our glorious Western States will cease to be tributary to the East, In the Mississippi Valley intellectual centres are even now beginning to assert themselves. St. Louis, Chicago, Louisville, Cincinnati are the rising stars in the firmament of the future, and already form a brilliant constellation. They are justly proud of their medical colleges, universities, hospital and clinical facilities, so great, that no student needs go East for instruction. We are also having our great men, and mean to keep them. The great West has heretofore been the nursery of men of the highest eminence, and has given to the East, Gross, Marion Sims, Flint, Sayre, Parvin, Bartholow, Meigs, Emmet, Thomas, and other brilliant luminaries. Our great men of the future will no longer leave us in search of higher honors. The growing West will be a field vast enough for their noblest ambition.

The President, Professor Dudley S. Reynolds, presided.

The first paper was by Professor C. G. Comegys, of Cincinnati, in which "Yellow Fever" was discussed from a clinical standpoint, giving a typical case of the disease, which was followed by general discussion.

In closing the discussion, Professor COMEGYS said: I certainly agree with what has been said on the non-contagious na-

ture of the disease. It is the clothing that spreads the disease. If a man be taken from a yellow-fever district, stripped of all his own clothing and given a new outfit, there is no danger of catching yellow fever from him.

TUESDAY, SEPTEMBER 25.

This was followed by a discussion of infant-feeding.

Dr. LARRABEE: In connection with this subject, there is another thing which should be considered along with it, the deterioration at the present day of our women on account of over-stimulation so common now. Up to within the last few years the question of infant-feeding was hardly considered, because of the fact that mothers were able to nurse their own children. This is not the case now, and the question of infant-feeding has taken a very important place in medical science. Of course, no food has as yet been found to take the place of the natural supply, and I think I can safely say that none such will be found. As the nearest approach to this natural food is the good old-fashioned family cow, pure milk, fresh from the cow, is the best.

The best of artificial foods are the hydrocarbons. A point in artificial feeding, and an important one, is that in almost every instance of artificially-fed babes, they are overfed. It is exceedingly difficult for the mother or nurse to distinguish between the cry of colic, made by a stomach distended with food, and the cry of hunger; and in the doubt in this case there is no more convenient a stopper than the bottle, and consequently that infant is continually overfed.

It ought to be known that every cry is not necessarily for food. Every infant ought to have water, and not always food, but it ought to be known, also, that the child requires a little salt now and then. The latter ingredient has done more in my hands in facilitating osmosis than all other medicines I have used. Another point, the artificially-fed child is kept always upon one diet. The mother who nurses her babe, gives it such diet as accident or inclination may decide, and the child feels the benefit or injury of such changes.

Dr. E. P. COOK, of Mendota: I have usually been so fortunately situated that when Nature has failed to supply the wants of the human offspring, my general resort has been to that which to my mind comes nearest to the mother's milk, that of the healthy cow. I only will add, that in my own observation those means that keep the milk in as pure and as nearly perfect a condition as possible with as little addition or change, by means of anything to preserve it in good condition—I mean as we ordinarily observe the sterilization of that milk that is intended to be given to the human infant—is one of the important subjects aside from the care in the selection of the healthy cow from which we obtain it. Of course, the milk of the healthy mother is best, but where it is necessary to make a substitute, let it be that of the cow. I don't know much about the various devices for keeping milk in good condition, but I am confident that if it is taken quickly and subjected to heat, placed in conditions where there is little or no chance of atmospheric infection, we have in that case the best thing as substitute for the mother's milk. I have been in the habit of immediately closing milk in fruit-jars, placing it in the ice-box and keeping it there until it is drawn upon. I know but little about those various substitutes of artificial food. I am glad to say I have had very little necessity to become familiar with them.

Dr. MAYFIELD, of St. Louis: I have adopted a method of sterilizing milk that has worked satisfactorily with me for twelve months. I took the suggestion from a milk company. The milk is sealed as soon as taken from the cow; then to sterilize this I have a water-tank. We heat the water for twenty-four hours, keeping it at the boiling point, and this water is first purified before it reaches a receiver, by

running through charcoal, and from there we draw it directly into the milk, making the preparation half water and half milk, adding sugar as necessary. I have used the various preparations of food as they come from the manufacturer, and a great many of them have given considerable satisfaction, but not as much as the milk prepared as I have stated.

Dr. N. GUHMAN, of St. Louis: It seems to me that the previous speakers have forgotten that the condition of the stomach of the child has a good deal to do with the diseases of the children. If we would make more use of antiseptics with the digestants, it would be better. We have to find out what is especially applicable in each case; it is the same thing with ourselves, we don't digest the same things in the summer that we do in the winter.

Dr. BEARD, of Chicago, read a paper on "Diseases of the Middle Ear."

Dr. DICKINSON, of St. Louis, discussing the same, said: I think that this disease, as a general thing, is neglected, and cited one unfortunate case as an illustration of such neglect. No attention was paid to it until some years afterward. At the time I saw the patient, this physician had deceased. On inquiring, I learned from the mother that at times little white substances had passed, and so probably all of the ossicula had come away. There was total occlusion of the meatus, and hearing was totally destroyed, rendered so by this closure. The other ear was similarly affected, but not to the same extent. Treatment within a short time arrested the process. Dr. Beard made a remark regarding the suppurative conditions of the middle ear: that they do admit of cure but the chance is not always given. A physician told me he had six cases which terminated fatally during the winter; therefore these affections of the middle ear are not trifling in character, and therefore deserve the attention of the general, as well as the special, practitioner.

Dr. D. A. THOMPSON, Indianapolis: In regard to the catarrhal affections, the time we usually look for them and their causes is in early infancy; they then develop this tendency and are subject to the changes in temperature; then is the time for the general practitioner to look after them. Some of these suppurative affections seem not to yield to any treatment.

The PRESIDENT: The presence of discharge from the ear should awaken suspicions that should reject an applicant for life insurance. I knew a man not long since who, in apparently good health, died within two weeks from a perforating abscess into the brain.

Dr. BEARD: I don't question the incurability of some cases, and I agree that some seem not to yield to the treatment I have mentioned, but it has been my experience that they are, as a class, a very satisfactory kind of disease to deal with.

Dr. WM. DICKINSON, of St. Louis, read a paper on "Retinitis Albuminurica," and gave details of a case presenting the characteristic features of this affection.

The presence of this affection simultaneously with the pregnant state was to some extent discussed, and the urgent necessity for immediately inducing premature labor, if it occurs during the seventh month of gestation or earlier, in order to avoid blindness or death from convulsions.

Should it occur during the ninth month recovery of normal vision usually occurs after delivery; if in the eighth month, and the induction of premature delivery is not performed, only one-half of the cases recover; if at an earlier date, blindness or death frequently occurs, the danger of the supervention of these events being proportionate to the time of its invasion prior to the time of normal delivery.

The great practical lesson to be derived is never to disregard or underrate the significance of progressive failure of vision, especially when the cause is obscured.

Dr. BAILEY, of Louisville: I would ask you to widen the aspect of Bright's disease, not as simply a disease of the kidneys;

the kidneys are not only involved; it is a general systemic disease, and hence this affection of the eye I would be disposed to regard rather as a part of the general disease than as a complication.

Some of these diseases are recognized more quickly in the eye than in the kidney. I believe it is constitutional always, in which there is connective-tisssue hypertrophy, resulting in hypertrophy of the left ventricle. I don't believe that a simple obstruction in the kidney would account for all the vascular changes.

I am inclined to take issue with the management of this disease as it occurs in pregnancy. I would put it on the same basis that I would a threatened convulsion due to the same cause, and I believe we can treat satisfactorily not only the disease, but by increasing the elimination from the kidneys we can save the patient from disastrous results and carry her to full term and delivery. So I would question the positiveness of the assertion that we do not wait a single hour, but remove the offending cause.

Dr. DICKINSON: I have no practical experience in this connection with pregnancy, and consequently I have to take the testimony of others; and authors on this point have been very emphatic in regard to the production of premature labor in such cases.

Professor D. R. BROWER, of Chicago, read a paper on "Exophthalmic Goitre and Its Treatment by Strophanthus."

He invited attention to the more prominent features in the clinical history and diagnosis of the disease, and then suggested its treatment by strophanthus.

The eyes, the thyroid gland, and the circulatory system are usually all changed by the morbific process in this disease. Usually the circulatory disorders are first manifested. These consist of increased frequency of the pulse, palpitation and dilatation of the arteries. The pulse, in a mild case, is about 100, but it may reach a point of much greater frequency. In the early stages the heart sounds are normal, but anæmic murmurs may soon be found, and, later, organic murmurs, that have resulted from the dilatation of the heart. The exophthalmus usually appears soon after the swelling of the thyroid, but occasionally before it, and still more rarely may precede it and the cardiac symptoms. The degree varies from a slight prominence of the eye to such protrusion that no part of the globe is covered by the lids. It is usually bilateral, not always symmetrical. It often appears earlier in one eye than in the other, and the prominence of the one may exceed that of the other. Ophthalmoscopic examination will show pulsation in the arteries of the retina.

Von Graefe first called attention to another useful sign about the eyes—the want of harmony between the movements of the eyeball and the upper lid. If the patient be directed to look downwards it will be found that the upper lid does not follow the movement of the eye, or only abnormally. The temperature of the body is elevated usually from one-half to one degree Fahr. A muscular tremor, sometimes coarse and jerky, like chorea, and sometimes fine and regular, like paralysis agitans, is present in almost every case. It is confined chiefly to the larger muscles. The head, fingers, and toes are usually exempt from this tremor. There are, also, constitutional disturbances. The gastro-intestinal area shows loss of appetite, impaired digestion, nausea, vomiting, and diarrhœa, with marked emaciation. The nutrition of the brain suffers much, as is manifest in insomia, headache, dizziness, weakness of thought and memory, irritability of temper, neuralgia. The milliampere-meter gives valuable information, as first suggested by Dr. Vigorius, by determining the condition of electrical resistance, which, in this disease, is markedly diminished.

Dr. A. A. Eshner believes that the symptoms are due to a disorder, functional in character, in the medulla oblongata, involving the cardio-inhibitory centre, the

vaso-motor centre, the respiratory centre, and the other important centres located in that part. Careful consideration of the physiological functions of these centres may enable us to work out the pathogenesis of the disease.

Its treatment has been very unsatisfactory. The drugs in ordinary use have had but very little influence upon it, but Professor Brower thinks that in strophanthus we have a remedy that in some cases is of great value. He has administered a tincture of strophanthus in three cases with benefit.

Dr. DICKINSON: In this disease the vaso-motor system has lost its control, and then we have the action of the heart irregular and frequent. The writer speaks of a case in which the pulse reached 116. In a case which I recollect it was so frequent that it could not be counted. Strophanthus was not used. I had to fall back on what my ingenuity could devise. I used digitalis and the galvanic current, by which the pulse was reduced to eighty-two, and at one time to sixty-eight, after a few days.

WEDNESDAY, SEPTEMBER 26.

Dr. C. S. BOND, of Richmond, Indiana, read a paper on "Conditions Which Precede Serious Lesions of the Kidney." He assumed the position that long before organic kidney lesions were to be discovered there were changes in the blood as to quality and physiological elements sufficient to lead the careful practitioner to proper appreciation of the case.

No ailment complained of by patients was too trifling to deserve correct diagnosis, and seemingly slight indispositions, continued for any length of time, were to be regarded with suspicion necessary to procure for them careful inquiry—such as pains in the back and loins, susceptibility to the influences of cold beyond a normal condition, pain or disagreeable feeling in the eyes upon their exposure to light, abnormal sounds of the heart, not pronounced enough to be designated as due to organic disease, and tendencies on the part of the various organs to disturbances of function.

He dwelt upon the circumstance of an increased quantity of urea in the urine, and urged the diagnostician to inquire into this, as many times a diagnosis could be made sufficiently early to abort a commencing Bright's disease or other malady as disastrous in its results.

Dr. LARRABEE: There is no more important subject for the consideration of the profession than this, and I must commend the presentation of Dr. Bond's ideas as he has expressed them. The prevalence of this disease is generally accepted to be on the increase. The fallacy of this belief may be explained by remembrance of the fact that they are better understood and more readily diagnosed now than formerly. It is doubtful whether the patient is in more danger from the disease than from the doctor who makes his diagnosis of the disease or eliminates it with the spirit-lamp and nitric acid. And we ought to do more in the particular line that Dr. Bond has indicated. No man supposes when he unbuttons his vest from distention induced by indigestion, or when he suffers from neuralgic pains, dimness of vision, etc., that he is on the outer borders of Bright's disease. Its frequency may be shown by instancing the fact that out of some 340 examinations of urine in a London hospital, half of the number, about 170, were found to have evidences of distinct lesions of the kidney.

Dr. J. M. MATHEWS, of Louisville, read a paper on "Obscure Rectal Diseases."

The term employed by Professor Goodell, "Hysterical Rectum," is, in my opinion, misleading, and while the importance of the affection cannot be overestimated, I am inclined to think a caption such as, "Some Obscure Affections of the Rectum," is better for the elucidation of the subject than that employed in Professor Goodell's paper, for the reason that it invites investigation. I dare say there is no physician here but has had some patient complain to

him of some vague symptoms of rectal disease when such diagnosis was not borne out by an examination.

Dr. Goodell says, "In this form of hysteria there are usually present in my experience some one of the protean symptoms of general nerve prostration, such as spineaches and backaches, ovarian uneasiness, wakefulness, and nervousness. But the chief suffering or the most exacting symptom is referred to some portion of the rectal tract, leading the physician to suppose he is dealing with some case of traumatic lesion. The act of defecation then gives great suffering, followed by painful throbbing which may last for hours. Patients thus afflicted so dread the suffering that they school themselves into habits of costiveness, and often become victims to opium eating." But is Dr. Goodell correct when he says that one of these may lead the physician to suppose that he is dealing with some traumatic lesion? To state it more definitely, is not the physician really dealing with a traumatic lesion, and can a cure be effected upon any other hypothesis? Certain it is that if a lesion exists, the disease will not be cured until such lesion is eradicated.

He cited a number of cases to illustrate these conditions, and gave the following as causes of these obscure affections of the rectum.

1. Hysteria (?) neurosis.
2. The reflexes.
3. A lesion or pathological change at seat of trouble.

TREATMENT.

Taking it for granted that a pathological condition is found in the rectum, I shall only refer to those that would likely cause symptoms simulating the nervous rectum. (?) They are, viz.:

1. Fissure.
2. Ulcers.
3. Congestions.
4. Proctitis.
5. Internal fistula.

He then outlined the treatment of the different forms of rectal disease.

Dr. H. H. MUDD, of St. Louis, read a paper on "Contusions and Lacerations of the Kidney."

He gave in detail several cases, in one of which a boy aged five years had suffered a contusion, which, on the fifty-first day after injury, required nephrectomy. The operation was made through a lumbar incision, and the patient made a good recovery.

He called attention to the fact that in these injuries the peritoneum is not generally injured, and that a fluid tumor gradually developed in the lumbar region on the side injured.

A contusion without serious laceration of the kidney, but accompanied by a perinephritic hæmorrhage, might present all the diagnostic symptoms of a rupture. On the other hand, destructive laceration of the kidney-substance is slow in developing characteristic symptoms. Usually there is ample time for investigation of the cases before operative interference is demanded.

Dangerous conditions which may develop during the progress of such cases are shock, septicæmia, cystitis, with extension of inflammation through the bladder to the other kidney, and nephritis of the injured organ. Suppression of urine in both organs may occur during the presence of one or more of these conditions. Destructive unilateral nephritis may develop in the contused organ. Cuts, bullet wounds, and tears of kidney-substance heal quickly. Laceration in pelvis of the kidney or the ureter is much more likely to leave an intractable fistula. Incision, with inspection of the injured organ and drainage were recommended before extirpation. Laceration of the kidney may occur without external evidences of injury.

Dr. WM. TOWNSEND PORTER gave "A Demonstration of the Effect of Cold, Applied to the Abdomen, Upon the Tracheal Circulation." It was made upon four cats, the trachea of each of which had been

opened with a galvo-cautery knife. First, a warm poultice was applied to the belly of each cat, and on changing that for a cold application the change in circulation in the trachea was shown.

CHICAGO PATHOLOGICAL SOCIETY.

Stated meeting, October 16, President I. N. Danforth, M. D., in the chair.

The session opened with a discussion on Professor Lydston's paper, "Syphiloma of the Tongue," which was read at a previous meeting.

The PRESIDENT said that a section of the specimen showed it to be a mixed sarcoma, with no indications of malignancy.

Dr. WESCOTT asked what Dr. Lydston based his opinion upon in believing that the growth was cancerous.

Dr. COPELAND said that from the general appearances of the growth Dr. Lydston thought it might have degenerated into cancer.

Dr. W. H. HAYMAN asked whether such a growth ever became malignant.

The PRESIDENT replied, "Yes; when it changes its cell type. It then becomes atypical."

Professor A. E. HOADLEY had not heard or read the paper; but the degeneration of such a growth from a benign to a malignant condition, he said, is not regarded as being well proven—that is, assuming that there are embryonal tissue-elements in the make-up of a malignant tumor. It is believed now that there is no such thing as a syphiloma ever becoming a carcinoma, or an epithelioma ever developing flat or spindle-shaped cells without the spindle-shaped cells originally existed as a basis for the development of the tumor. A syphiloma, however, might be an exciting cause for the development of carcinoma, but if it exists without the primitive embryonal cell-structures, it can never degenerate into a malignant tumor. This is yet a question in the minds of the profession.

The committee, composed of Drs. Dion, W. H. Hayman, and J. J. M. Angear, previously appointed to examine the literature on the subject of superfœtation, and to report on Dr. Murdock's case, reported conjointly as follows:

Churchill concludes:

1. That the theory of superfœtation is unnecessary to explain the birth of a mature fœtus and blighted ovum; of a mature and immature fœtus, born together or within a month of each other, or of fœtuses of different colors, as they may reasonably be supposed to be the product of one act of generation, or of two nearly contemporaneous.

2. That in cases of double uterus it is possible for a second conception to take place, and (judging from the subsequent birth of the second child, in the only case on record) at a later period than the first.

3. That in the remaining cases, where one mature child succeeded the birth of another after a considerable interval, we have no proof of a double uterus in any, and positive proof that in one case it was single, and that to the explanation of these cases no theory as yet advanced is adequate; that of superfœtation being opposed by physical difficulties, insurmountable in our present knowledge.

Simpson, Duncan, Tyler Smith, and others, deny that fecundation is prevented by the condition of the uterus in the early months of gestation. Tyler Smith has shown the mucous plug to be different only in quantity and not in kind to that which occupies the cervix in the unimpregnated state, and will not prevent passage of spermatozoa. Neither does any obstacle occur to the passage of a second ovum when the uterus is already occupied by one. Inasmuch as neither of the layers of the decidua in the first month of pregnancy pass over the orifices of the Fallopian tubes or cervical canal, until the third month the ovum with its envelopes is attached to a small portion only of one of

the parietes of the uterus, leaving every other portion of the decidua vera free for the reception and development of a second ovum. "The infrequency depends," says Tyler Smith, "upon the absence of perfect ovulation during pregnancy, and not to mechanical impediment."

Playfair quotes Bonnar's case from the British peerage, in which a child was born September 12, 1849, and the mother gave birth to another January 24, 1850, an interval of 127 days. Subtracting fourteen days, which Dr. Bonnar assumes to be the earliest possible period at which a fresh impregnation can occur after delivery, the gestation is reduced to 113 days, less than four calendar months. As both survived, the second child could not possibly have been the result of a fresh impregnation after the birth of the first; nor could the first have been a twin prematurely delivered, for if so, it must have only reached a little more than the fifth month and would not have lived.

Cazeau, in 1853, obtained a placenta from a woman who was delivered at full term of a fully-developed child. It had two amniotic bags; one belonged to the living child and presented no unusual appearances; the other, much smaller, contained barely a trace of fluid, but a mummified fœtus the size of one of four months' development. The dead fœtus may irritate the uterus, bring on contractions, and be expelled, the other remaining to full development.

Hamilton (1792) says: "Soon after impregnation the uterine orifices become entirely clogged up by a thick, viscid gelatine. The internal cavity is also lined by the external membrane of the ovum, which attaches itself to the whole internal surface of the womb. The Fallopian tubes also become flaccid, and, as gestation advances, are removed from the ovaries and can not convey the ovum. From these and other reasons the doctrine of superfœtation is now generally exploded."

Burton (1751) attended a woman who, in two subsequent pregnancies, had the remains of a fœtus and integuments attached to the placenta.

Glison reports the case of an Indian woman, of Brazil, who gave birth within short periods to an European, an Indian, and an African child, and says the second child must be born three months later than the first in order to be called superfœtation.

Barnes says physiologists must first prove that ovulation takes place during pregnancy, before the doctrine of superfœtation can be substantiated.

Ross, of Brighton, reports a case (*The Lancet* August, 1871), in which a patient miscarried of twins on July 16, 1870. Fifteen weeks later, October 31, she was delivered of a healthy child, but this case was one of double uterus, each side of which had been impregnated. The patient had given birth to six children at term, nothing remarkable having been observed in her labors.

Eisemann reports the case of a woman who was delivered of a second child 140 days after the first, both having been mature.

Moseley, in his work on Tropical Diseases, reports a case of a negro woman who was delivered of two children at one birth, one negro, the other mulatto. She told the physician attending her that a white man on the estate was the father of the mulatto. Cases of the same kind and in the same circumstances have been published by Bouillon, Dewees, Crotti, Guerarde, Dunglison.

Desgranges, of Lyons, speaks of a woman, who was delivered on January 20, 1780, of a seven months' fœtus, and on July 6, 1780, five months and sixteen days later than the former birth, she was delivered of a second child which had apparently reached its full time.

Bigard, of Strasburg, reports the case of a woman, aged 37, who was delivered of a lively child on the 30th of April,

the lochia and milk were soon suppressed. On the 17th of September of the same year (year not mentioned), about four and a half months after the first delivery, she brought forth a second apparently mature and healthy child. On the death of the woman the uterus was found to be single.

Maton reports the case of an Italian lady, married to an Englishman, who was delivered of a male child at Palermo, November 12, 1807. On the 28th of February, 1808, not quite three calendar months after the preceding accouchment, she was delivered of a second male child. Other similar cases are quoted by Beck, Velpeau, and Cuming.

Madame Boivin reports a case of a woman aged 40, who gave birth to a female child on the 15th of March, 1810, weighing about four pounds. As the abdomen remained large, Mde. Boivin introduced her hand, but could find nothing in the uterus; her examination led her to suspect that there was another fœtus, either extra-uterine, or contained in a second cavity in the womb. On the 12th of May, of the same year, a second female infant was born weighing not more than three pounds, feeble and scarcely able to live.

Buffon reports a case of a female at Charleston, South Carolina, who was delivered in 1714 of twins, within a very short time of each other. One of those was black, the other white. This circumstance led to an inquiry, when the woman confessed that on a particular day, immediately after her husband had left his bed, a negro entered her room and compelled her to gratify his wishes, under threats of murdering her. The second copulation took place immediately after the first.

The above case is selected to illustrate the subject of super-fecundation or superconception, but it is erroneously reported as one of superfœtation.

Many of the cases reported as cases of superfœtation are not proven to be such beyond a doubt. Some are not well reported, showing great carelessness on the part of the reporter by omitting to state important points. The following are a few cases which resemble more or less the case which was reported by Dr. Murdock.

Dr. Cairns exhibited to the Obstetrical Society of Edinburgh, June 9, 1869, a beautiful specimen of a blighted twin which had been removed from a patient immediately before the birth of a living child at full term. The blighted fœtus had been arrested in its development, molded into the form of the uterine walls, and retained, but owing to the membranes being entire it had not become putrid (Ed. Med. Journal, August, 1869).

Dr. Flecken relates a case in which a powerful woman was delivered of a strong living and full-timed child. After the expulsion of a very large placenta, another compact, fleshy placenta in partial connection with the former, followed. The accompanying membranes contained a six-months' fœtus, the body of which had been compressed so flat that the broadest part of the cranial and thoracic region did not exceed five lines. The bones of the cranium lay separated from each other, the nasal bones projected as sharp points, and the broken malar bones penetrated the skin. While in the sixth month of her pregnancy the woman had fallen down stairs (Med. Times and Gaz. March, 1862).

Dr. Picket, of Great Barrington, Massachusetts, relates the following case, which is of some interest in medical jurisprudence: I was called to Mrs. R., of Stockbridge, whom I found in labor, which lasted about six hours. This, for her, was rather severe, but she was safely delivered of a large, healthy child, apparently at full time. While examining for the placenta, I discovered something had apparently ossified. The placenta soon passed off and with it this apparently foreign substance, which proved to be a dead and partially decomposed fœtus, of about four months.

Dr. Wilson reports the following case to

the Glasgow Medical Society: Mrs. T., on the 21st of November last, after a short and easy labor, was delivered of a living child. She menstruated for the last time about the beginning of March. When three months or thereby advanced in her pregnancy, she had twice in succession a considerable sanguineous discharge per vaginam accompanied with slight uterine pains. She, however, paid little attention to these symptoms at the time, as they did not occasion any anxiety or alarm. The placenta on examination seemed generally healthy, with the exception of a few small indurated points of a tuberculous character, scattered over various parts of its extent. Toward the margin of the placenta was found a small fœtus closely enveloped in a yellowish fat-like mass, which lay in a groove or sulcus formed in the placenta by the overlapping or bulging over of a portion of the fœtal surface. There can be no doubt, I think, this was primarily a case of twin conception, while one was blighted at or near the third month, and the other carried to the eighth, when both were nearly simultaneously expelled from the uterus.

In the *British and Foreign Medico-Chirurgical Review* for October, 1854, Dr. Thielman relates the following case of superfœtation: In July, 1852, a peasant woman became pregnant the third time; menstruation appeared twice after conception. On the 26th of March, 1853, the pains appeared and the next morning she was delivered of a girl, small but living; the after-birth came away normally. The lochia ceased in a few hours. The secretion of milk was so scanty that the child could not be supported by it. Eight days after delivery the woman returned to her household duties, but she felt the movement of a second child in her left side. On the 18th of May, that is, fifty-two days after the birth of the first child, pains came on, and the birth of a second girl, somewhat smaller, followed. From this time the secretion of milk went on so freely that both children derived sufficient nourishment.

Dr. Atchinson communicated to the Obstetrical Society of Edinburgh a case which is supposed to be an instance of superfœtation. The subject of the case was a well-formed woman, aged 30, who had been born and brought up in India, had borne two children at full period of gestation, and then followed two miscarriages; had lately been suffering a good deal from fever; her general health not good at present; system much relaxed from debility, caused chiefly by the prevalent great heat of the season. On examination I found that after a short and easy labor the child was born and the placenta discharged. The uterus was fairly contracted. On examining the child I found it to be a case of premature birth at the seventh month, which corresponded with the mother's statement. The child did not survive over a few hours. I then examined the placenta, to which, much to my astonishment, was attached a large sac. This, on closer inspection, proved to be another set of membranes in an entire state, containing another fœtus; the placenta of this last being incorporated into that of the first-born fœtus, much smaller, but with a distinct mark of union till existing. At one point the membrane of both the fœti were inseparably united, and those of the smaller fœtus were much more dense in structure and less transparent than those of the larger fœtus. The fœtus contained in the sac (which was not opened) seemed from its size and development to have completed nearly its fourth month of utero-gestation.

Dr. ANGEAR, after quoting at great length the literature upon superfœtation, closed by saying: We have found no recorded cases precisely like that of Dr. Murdock, but several similar. In Dr. Murdock's case let us suppose that the blighted fœtus had not been found, then all who knew anything of the case would have said that there had been an abortion, or there had been no conception previous to the present

gestation. Suppose, again, that we had never known anything about the symptoms of a miscarriage, and the blighted fœtus had been found, then we should have come to the conclusion that it was simply a case of twins with one of the foeti dying early in fœtal life and retained several months in utero as in the examples given above. The evidence that there had been a miscarriage is not positive. It is simply negative. No one saw any foetus; therefore what positive evidence is there of a miscarriage; but does that prove that there was no miscarriage? If taken for granted that there was a miscarriage, then we have a case of double conception or super-conception (not superfœtation), or twins, with one of the fœti blighted and retained in utero and expelled with the living and viable child.

EXTRACTS AND ABSTRACTS.

THE MODERN MEDICAL CURRICULUM.

Though the regulations made by the General Medical Council for the conduct of medical education in the United Kingdom are simple in principle, yet their practical application by the numerous universities and corporations involves a good deal of complexity. The council lays down a minimum curriculum and a minimum standard of knowledge, and no student can be admitted into the profession who does not attain to this standard. Broadly speaking, the regulations amount to the following: (1) The would-be student must pass an examination in general knowledge. A long list of the examinations which are considered adequate will be found on the first page of this number of the *Journal* (September 8, 1888). Having passed this test, the student can enter his name on the *Students' Register* kept by the General Medical Council. He is next required (2) to pass through a course of instruction in the preliminary sciences, chemistry, and biology, and to pass an examination therein. (3) He next receives instruction in anatomy and physiology—that is to say, the structure and functions of the body in health, and is examined in these subjects. Finally, the concluding part of the obligatory curriculum is given to (4) the study of diseased processes; and the student must pass examinations in medicine, surgery, and midwifery before obtaining a degree or diploma entitling him to practice.

The medical courses of all the universities and corporations run on parallel lines, and the familiar simile is peculiarly applicable in this instance, for as two parallel lines can never meet however far they may be prolonged, so the curricula of the universities and corporations never intersect, and the student once committed to a particular line finds it always difficult and often impossible to reach another, and as it may then appear to him more desirable, line without retracing his steps nearly to the beginning. An initial mistake, therefore, is liable to entail very serious consequences. The possession of the degree of M.D. is rightly regarded by all practicing medical men in this country as a distinct advantage, yet a very large proportion find themselves debarred from obtaining it, because the Conjoint Boards of England, Ireland, and Scotland, formed by the union of the medical corporations in London, in Dublin, and in Edinburgh and Glasgow, respectively, have no power to grant degrees. A Royal Commission is now sitting to inquire into the needs of the higher education in London, and it will in all probability recommend such reforms as will place degrees in medicine within the reach of all diligent medical students in London. Meanwhile, remembering the uncertainty of legislation, and the dilatoriness of government offices, it is the part of prudence to advise every young man at the outset of his career to consider well whether the degree of one of the existing universities be not within his means. The facilities for obtaining such

degrees have notably increased within the last decade. The medical school of Cambridge, for instance, has grown to be one of the largest and most important in the country; the teaching, organized with the greatest care, is carried on by professors of the highest eminence, who have the command of excellent laboratories, and all the most approved educational appliances. While this school is taking its proper place in the life of its university, the medical teaching of the sister university has also been brought into a state of great efficiency, and the course of study for the degree of M.B.Oxon. has been carefully arranged to meet the needs of the modern student. Even the University of London, which has so long maintained an obstructive, if not retrograde, attitude, has promised certain important reforms which will make it possible to obtain its degrees at a less sacrifice of time and of opportunities for gaining practical knowledge. The official publication of these alterations can not be much longer delayed. Whatever may be the outcome of the present agitation a metropolitan student who has passed the earlier examinations of the university will find himself at the least in as good a position and not improbably in a better than those who may wait in the hope that "something may turn up." The creation of the Victoria University and the affiliation with it of the Owens College in Manchester, the Yorkshire College in Leeds, and the University College in Liverpool is another of these changes of recent years which have brought medical degrees within the reach of a much larger proportion of students; those who enter at one of these medical schools with a view to the degree of the Victoria University will not regret their choice. The University of Durham, with which the medical school of Newcastle-on-Tyne is affiliated, offers opportunities for gaining a degree in medicine of which students have been, perhaps, too slow to take advantage. There is, therefore, an extensive choice before the student, who will, moreover, find that all the English universities, with the exception of the Victoria University, allow a good deal of latitude in the choice of a school. Students at Oxford and Cambridge, for instance, after passing examinations in anatomy, physiology, and the preliminary sciences, can proceed to a metropolitan hospital, and take advantage of the unrivaled advantages for gaining clinical knowledge which London affords.

Of the four Scotch universities it is not necessary to speak here at length; the advantages which they offer to students are sufficiently evidenced by the large number who annually cross the Tweed in search of education and medical degrees in Scotland. Each university is a world sufficing for itself; between them there is no reciprocity, and their regulations are inelastic; Edinburgh, however, permits its undergraduates to pass limited periods of study in certain other schools. In Ireland, degrees in medicine are granted by both the universities, and the regulations of the Royal University will be found to have been drawn up in a liberal and practical spirit, in sympathy with the circumstances of modern life.

The choice of the student who is content to forego the possession of the degree of M.D., or to trust to the chapter of accidents to place it within his reach in the future, has been considerably limited in recent years by the formation of Conjoint Boards. In England he must choose between the Conjoint Board of the Royal College of Physicians and Surgeons and the Apothecaries' Society; the former will present him with the double diploma ("a triple qualification") of the two colleges, and hopes before long to be able to grant also the degree of M.D.; the latter gives him its license, which is also a "triple qualification." In Ireland there are at present two Conjoint Boards, and in Scotland one, each granting a "triple qualification."

This slight sketch may serve as a clue to the great body of information contained

in the preceding pages, and in conclusion we would again impress upon intending students and their friends the paramount importance of looking far to the future before taking the first step; it is a source of regret that this is so, and there is reason to hope that before many years are passed important reforms may be achieved, but meanwhile we have to deal with rules and regulations as they are and not as they ought to be.—*British Medical Journal.*

THE UNITED STATES CENSUS.

The laborious work of the United States Census, 1880, has reached its twelfth volume, and Part II of that volume is one of especial interest to those engaged in the promotion of preventive medicine and sanitary science. It deals with mortality and vital statistics, subjects which in this country are included in the ordinary reports of the Registrar-General, and which do not profess to come within the range of the staff who compile our census returns.

One especial feature of the volume under consideration consists in the division of the States into groups or regions, the physical characteristics of which are more or less distinct. Thus, there are twenty-one grand groups, each such group being made up of a number of State groups. The first four comprise the Atlantic and Gulf coasts, which primarily possess a sea climate where the extremes of heat and cold are mitigated by the presence of "that great balance-wheel of temperature," the ocean. Then come the several plateaus and hill districts, the region of the great northern lakes, the great river areas, the groups characterized by plains, heavily-timbered districts, the Cordilleran range, and lastly the Pacific coast group. Speaking generally of them, in relation to the influence of topographical features on special causes of death, it is shown that the conditions of climate, the amount of annual rainfall, the amount of low-lying and swampy land, age and sex, the distribution of the people, and the proportion of the colored and foreign population, appear to be the chief causes of the differences between the several grand groups, or between different portions of the same grand group. As regards the influence of geological formation it is held that, except in so far as it affects climate or drainage, the geology of the different regions does not appear to have exercised any marked influence upon the proportion of deaths from various causes, with the exception of goitre, urinary calculus, lead-poisoning, and, perhaps, such diseases of the digestive organs as are due to inorganic impurities in the water-supply. This experience coincides very much with that which has been obtained in this country.

The volume next deals at considerable length with a number of special diseases, and very carefully prepared maps are given, showing by different shades of color the different proportions which the number reported as to each of the several causes of death bears to the whole number reported; the State group being taken as the unit of area, except in the case of diphtheria, where the county is also taken as a unit. In some areas, such as the Indian Territory, no proper enumeration of deaths could be obtained; in others, such as New Mexico and Western Texas, the statistics could not be relied on as to some diseases; but in others, as in the Northern Mississippi group, it was found practicable to shade the maps so as to give an indication of the influence of great cities in the group. * *

Information of a similar character is supplied as regards a large number of other diseases and groups of diseases, and the statistics bearing upon the subject have been compiled in much detail and in a manner well calculated to serve the purposes of public health. The material embodied in this volume is in itself of the highest merit; but it will reach even a higher standard of value when in subsequent years detailed records extending over successive periods, and prepared with

ever increasing accuracy, admit of being placed in comparison with each other.—*The Practitioner.*

Dr. John C. Peters says it would be an easy matter to clean city streets, and at the same time purify the air, by the issue of a dilution of bromine. Sixty cents worth can be diluted in three or four hundred gallons of water, which, if sprinkled on the streets, will be found effectual in purifying the germ-laden atmosphere of the heated city. Used on the streets it is one of the most powerful disinfectants. If city streets were sprinkled with a dilution of bromine, the sewers and the sub-ways flushed with it, and back alleys and the docks disinfected, it would do much to break up diseases which rage in certain districts of our cities.—*Herald of Health.*

THE CANADIAN MEDICAL ASSOCIATION.

The Canadian Practitioner, for October, says, regarding the last annual meeting at Ottawa:

The recent meeting of this now well-established association was, in every respect, a very useful and pleasant one, and a success. The attendance was quite as large as usual.

The profession of Canada should support this association in the future more loyally than it has in the past. We would like to see three hundred instead of one hundred in attendance at each meeting. We want to keep up our connection with physicians in all parts of the Dominion, and the best way to do so is to meet at the annual gatherings of this, the most purely Canadian Medical Congress.

The association has now reached its majority. It came into existence in the same year as Confederation, and we think it can be fairly said that its success has been quite equal to that of our national progress. Many of the same difficulties which stand in the way of our national success are also barriers to the progress of our Dominion Medical Association. The chief among these is the distance between the different provinces, and the great disparity of interests, the result of such distances. It is probable, however, that in both cases the most troublesome times are past, and that the success of both will be more rapid and more steady in the future. * * *

The division of the association into three sections facilitated business very much. As was emphatically and truthfully stated by Dr. Mills, we, as members of the association, need to have greater energy and industry in preparing papers which will be of interest and profit to members of the profession generally.

Dr. H. P. Wright, of Ottawa, was elected president for the coming year.

SEMOLINA IN DIABETES.

Mr. W. Stanley Armitage says: Some time ago I had the opportunity of watching a case of persistent glycosuria very closely, and found that at a time when the ingestion of a very small amount of toast, bread, or other farinaceous food was sufficient to produce Fehling's test afterwards in the urine, a large quantity of semolina pudding could be consumed without any such result. I was induced to try semolina after hearing of the method of its manufacture. As the quality of this food seems likely to vary, I should state that what was used in this case was obtained of an Edinburgh house, and was stated to be of the best. This I mention because, if carelessly prepared, no doubt much of the farinaceous element might be retained, though I am not aware that this ever is the case. Not having heard of semolina as a food in diabetes, I should much like to hear of any one who may have tried it, and also would request other medical men to see if it can be given in other and more pronounced cases of diabetes with a like good result. If such were the case, as it could be cooked in various forms, or baked as bread, it would add considerably to a class of food which is at present only far too limited.—*Lancet*, April 28, 1888.

BOOK REVIEWS AND NOTICES.

INTRA-CRANIAL TUMORS. By BYROM BRAMWELL, M. D., F. R. C. P. E., F. R. S. E. Philadelphia: J. B. Lippincott Company. 1888.

The past year has been exceedingly rich in literature on intra-cranial surgery. The present volume is the most ambitious and satisfactory contribution from the clinical side. It is a model of the book-maker's and engraver's art. The photo-engravings of pathological specimens put the reader in the position of an original observer. This is not perhaps the least advantage it possesses over hand-engraving. It almost eliminates the personal equation, and renders the observations of to-day capable of interpretation from the standpoint of to-morrow. In all scientific works this form of engraving and illustration is to be encouraged.

It will be a disappointment to many readers that the author has excluded from consideration abscesses of the brain, although he includes other parasitic cysts to which they are etiologically and pathologically connected. Clinically, abscesses of the brain must always be excluded before a tumor (Bramwell) can be diagnosticated.

Among the symptoms of intra-cranial tumor, double-optic neuritis occupies a full share of attention. The author gives preference to the pressure-irritation theory of Leber and Deutschmann. It seems as if the subject of localization of the tumor had not received as full and careful consideration as its surgical importance requires. Recent clinical and pathological experience are not utilized to correct the well-known experimental conclusions of physiologists. In this respect the contributions of Horsley * and Seguin † are much more satisfactory. Arthur W. Hare adds a chapter on the surgical treatment of intra-cranial tumors.

A MANUAL OF GENERAL PATHOLOGY, Designed as an Introduction to the Practice of Medicine. By JOSEPH FRANK PAYNE, M. D., Oxon., F.R.C.P. Pp. xiv and 528. Philadelphia: Lea Brothers & Co. 1888. Chicago: A. C. McClurg & Co.

Those who are familiar with the development of pathological knowledge since the appearance of Virchow's *Cellular Pathologie*, have observed that the field of pathological histology has developed more rapidly than, and somewhat at the expense of, general pathology. The causes which have brought this state of things about are evident, and need not be mentioned in this connection. The American translation of Uhle and Wagner's General Pathology has, whatever the reasons may be, not come into general use among students; is, besides, now twelve years old, and consequently does not represent present opinions, especially in regard to parasites. In view of the reasons briefly outlined above, it should not seem an extravagant statement to say that this book, if a good one of its kind, is both a much-needed and a welcome contribution. It is an excellent book in every way. The author has succeeded very well in discussing his subject in its relation to the practice of medicine. It is a conspicuous fact that a book may be excellently arranged, thoroughly cover its subject, and fully represent the latest opinion, and yet fail to reach the readers for whom it is intended, through some fault in style and attractiveness. It is a pleasure to be able to say of the volume under consideration that it does not belong in that class among books. Its style is attractive and clear, and the comprehensiveness of the discussion of the various topics is admirable. The author is evidently a teacher of ability and long experience. If the book receives the attention among medical men which its merit demands, it will have a very large circle of careful readers.

An attempt to present an outline of the manner in which the subject is treated, is intentionally omitted. In the limits of a book-notice such an attempt is unavoidably abortive, in dealing with such a multitude of details as general pathology embraces. The work of the publishers leaves nothing to be desired. E. W.

A PRACTICAL TREATISE ON THE MEDICAL AND SURGICAL USES OF ELECTRICITY; including Localized and General Faradization; Localized and Central Galvanization; Franklinization; Electrolysis and Galvano-Cautery. By GEO. M. BEARD, A. M., M. D. and A. D. ROCKWELL, A. M., M. D. Sixth edition. Revised by A. D. ROCKWELL, M. D. New York: William Wood & Co. Chicago: W. T. Keener. Pp. xxx and 758. 1888.

Since the first appearance of this work it has been of recognized value—one of the best books in the English language—on the subject. Having now reached a sixth edition it is safe to say it is still regarded with as much favor, because of careful revision with each new edition. The changes that have been made in the different editions are so expressly stated in the preface to the sixth edition that, as the work is so well known, it only needs a

* Horsley; "Topography of the Cerebral Cortex." American Journal of the Medical Sciences, April, 1887, p. 342.

† Seguin: "Contribution to the Diagnosis and Surgical Treatment of Tumors of the Cerebrum," American Journal of Medical Sciences, August, 1888.

"Cerebral Localization." Annual of the Universal Medical Sciences for 1887.

statement of those changes, and that of the preface to this edition gives them so fully that we here produce it:

"The changes and additions in this work, as successive editions have been issued, have been confined to physics and physiology and the department of nervous disea-es, where electricity has wrought its best results. While this agent is far from being a panacea, yet its increasing range of usefulness in medicine may be best illustrated by reference to these various additions. In the second edition the chapters on Electro-Physics and Physiology were largely rewritten; the method of central galvanization described and illustrated, electro-surgery more fully treated, and the relation of electricity to the diseases of children and of the skin considered in detail. In the third edition were given the highly satisfactory results following the treatment of exophthalmic goitre by galvanization of the sympathetic, and some of the sequelæ of acute diseases by general Faradization. The chapter on Electro-Diagnosis also was largely rewritten. A fourth edition was rendered necessary by a revival of the use of Franklinic electricity, due to vastly improved appliances, and contained also the extraordinary results following the application of dynamic electricity to cases of extra-uterine pregancy. The fifth edition discussed facts hitherto, and even now, but little appreciated, concerning the induction coil, its varieties, and the differential indications for their use. These statements the author deems worthy of careful consideration, and believes that further experience will result in still more important, as well as more definite, deductions. Within the past two or three years Apostoli, of Paris, has, by his experiments and the results that he has succeeded in obtaining, greatly enlarged the domain of electricity in gynæcology. The revision in the present edition, therefore, has been mainly restricted to this subject, and the chapter on the Diseases of Women almost entirely recast. The methods through which these better results in gynæcology are obtained do but confirm the truth of the observation made in the preface to the third edition, to the effect that the real scientific basis for the use of electricity in medicine and surgery is found in electro-physics more than in electro-physiology."

PHYSICIANS' INTERPRETER. IN FOUR LANGUAGES. Specially arranged for diagnosis. By M. VON V. Philadelphia: F. A. Davis. 1888.

The publisher announces that the object of this little work is to meet a need often keenly felt by the busy physician, namely: the need of some quick and reliable method of communicating intelligibly with patients of those nationalities and languages unfamiliar to the practitioner. The plan of the book is a systematic arrangement of questions upon the various branches of practical medicine, as the eye, ear, nose, throat, fevers, surgical operations, stomach complaints, general health, special diet, patient's history, etc., etc., and each question is so worded that the only answer required of the patient is merely YES or NO. The questions are all numbered, and a complete index renders them always available for quick reference, in English, French, German, and Italian.

It is bound in full Russia leather, for carrying in the pocket (size five by two and three-quarter inches, 206 pages).

The plan of the book is similar to that of the phrase-books, designed for the convenience of travelers in Continental Europe, who are not familiar with the languages of the different countries visited. This work will, no doubt, be found to serve a like purpose for some physicians, among whose patients several different languages are spoken.

HAND-BOOK FOR YOUNG AND OLD OPTICIANS. By W. BOHNE. With illustrations. Published by the author. New Orleans. 1888. Pp. 108.

This is a small guide-book, designed, as the author announces, for the guidance of opticians. He states that it was prepared for them because he was unable to find any similar book to aid him in his work, and he now gives them the result of his recorded experience as a practical optician. There is much in it of practical value to the working optician, and the advice given is generally reliable, even when he goes out of his province to advise treatment in cases of injury to eyes from various accidents, to "their friends and customers, who may, in their trouble, come running to the optician as the next proper person to give them relief."

If used as designed by the author, it will doubtless serve many well, but it should not be supposed that the instruction and advice given will qualify an optician to assume the function of the ophthalmologist, any more than reliable instruction for the pharmacist, as such, justifies him in assuming the prerogative of the phys cian, a fact which too many disregard.

THERAPEUTICS; ITS PRINCIPLES AND PRACTICE. By H. C. WOOD, M. D., LL. D., Professor of Materia Medica and Therapeutics, and Clinical Professor of Diseases of the Nervous System in the University of Pennsylvania. A Treatise on Therapeutics. Seventh edition. Rearranged, rewritten, and enlarged. Philadelphia: J. B. Lippincott Company. Pp. 908. 1888.

That the seventh edition of this work, so familiar to the profession, has already been issued, is conclusive of the estimate in which it is held. No more

is, therefore, required to be said regarding it than to notice some of the points in which this edition differs from the preceding six.

The author justly says: "Comparatively few persons have a full conception of the rapid progress of therapeutics, and the amount of labor involved in keeping up with this forward movement."

Nearly two hundred pages of new matter have been added to the book.

All the new drugs of any recognized merit have been considered, and in the therapeutic portion, the remedial measures that have been employed by the profession in recent years have been here presented. The book can safely be accepted as an exponent of the deserving materia medica and the enlightened therapeutics of the present day.

The mechanical work of the book is excellent. It is printed on good paper with clear type, and is in every way worthy of the publishing house of J. B. Lippincott Company.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Second session. 1887. Pp. xx and 254.

The report of the transactions of the association gives the seventeen papers read before it at its second annual meeting, together with the discussion of them.

A list of the one hundred members, to which the association limits its membership, and of the honorary members, is given, as well as a brief biographical sketch of each of the three members, Drs. Hudson, McBride, and Rochester, who died during the year.

A PRACTICAL TREATISE ON DISEASES OF THE EYE. By EDOUARD MEYER, Professor A L'École Pratique de Mèdicin de Paris, Chevalier of the Legion of Honor," etc., etc. Translated by FREELAND FERGUS, M. D. With two hundred and sixty-seven illustrations and three colored plates. Philadelphia: P. Blakiston, Son & Co. Pp. xi and 647. 1887.

This is the first Engl.sh edition of the work of the author, published in French in 1872, and, since then, translated into the German, Spanish, Polish, Russian, and Japanese languages. The present translation is from the third French edition.

The translator says: "The original work struck me as being not only the most concise, but, also, the most comprehensive manual on the branch of which it treats that I had ever perused, and it was this conviction which led me to undertake the translation."

The fact of the work having been translated into so many languages, with four editions of the German translation, indicates that the English translator's conviction regarding the merits of the book is shared by many others. The chromo-lithographic plates are from the well-known and justly esteemed atlas of Dr. Liebreich. The text of the work is systematically arranged, being divided into twelve chapters. It is abundantly illustrated with wood engravings of a high order of merit.

The American publishers have issued it in their accustomed good form, so well known to the medical profession.

It is a pleasure to commend a book so worthy of commendation as this one from every point of view. It merits a large circulation among English-speaking ophthalmologists.

NASAL POLYPUS, WITH NEURALGIA, HAY FEVER, AND ASTHMA, IN RELATION TO ETHMOIDITIS. By EDWARD WOAKES, M. D., London, Senior Aural Surgeon and Lecturer on Diseases of the Ear at the London Hospital; Surgeon to the London Throat Hospital. With illustrations. Philadelphia: P. Blakiston, Son & Co. Pp. vii and 140. 1887.

The chief object of this little book, it is stated by the author, is to discuss the subject of ethmoiditis, and to present its claims upon the profession for more consideration than it has usually received. Other affections of that region are incidentally considered, whether standing in the relation of cause or consequence, or as a complication of that affection. The book is divided into twelve chapters, and treats of a subject that is now attracting much attention, for it is not yet clearly established as to just what relation, from an etiological standpoint, affections of the naso-pharynx hold to affections of the ear. There is concurrence of opinion that there is an intimate relation between them, and in the effort that is being made to get facts and formulate ideas regarding the pathology, this book is timely, and will be found to be useful. The merit of the previous writings of the same author on kindred subjects has been recognized, and this one is welcomed as bringing further contributions where and when wanted. The cuts given are well executed, and aid in elucidating the text instead of confusing, as not infrequently happens.

CHEMICAL EXPERIMENTS FOR MEDICAL STUDENTS; Arranged after Beilstein. By W. S. CHRISTOPHER, M. D. Cincinnati: Robert Clarke & Co. Pp. 84. 1888.

The author says in his preface that "the object has been to simplify and limit, rather than to multiply, the number of experiments," and "the application of the experiments in inorganic chemistry to systematic qualitative analysis has been omitted, as not adapted to the wants of the medical student."

In the limited time available for practical chemistry in most medical colleges, it becomes desirable for the student to acquire the general principles of the science, and such special facts as may be most

useful to him in practice, as directly as possible; to study chemistry from the medical rather than from the chemical standpoint.

The experiments cover work with the principal metals and acids, using Beilstein's examples. In addition, the more important alkaloids and some organic compounds of medical interest are considered. In physiological chemistry, the work deals with the proteids and carbo-hydrates, the digestive processes, blood, bile, milk, and urine.

The acid tests recently introduced for the clinical examination of stomach contents are also given.

It may be used in conjunction with any systematic treatise on the subject.

Extra blank leaves are inserted at the end for students' notes.

A SYNOPSIS OF THE MEDICAL BOTANY OF THE UNITED STATES. By J. M. G. CARTER, M. A., M. D., Ph.D., Sc.D., Member of the American Medical Association. Pp. 176. St. Louis. G. H. Field. 1888.

In his introduction the author gives the number of the medical plants in the United States as embracing "about 140 orders, 620 genera, and more than 1,300 species and varieties." The statement is also made that "the list is fairly complete of plants east of the Mississippi River," and that, regarding those in the vast country lying west of that river, "we must feel that our medical knowledge of that region is comparatively meagre."

The parts of the plants from which their active principles are taken, and to which their remedial virtues are due, are given, and attention is drawn to the established fact of the changes which result in plants cultivated elsewhere than in their native soil, citing the fact that cinchona plants, growing in hot-houses, are nearly free from quinine, etc., etc. The work indicates care and labor in its preparation, and contains interesting and useful information.

A CLINICAL ATLAS OF VENEREAL AND SKIN DISEASES, INCLUDING DIAGNOSIS, PROGNOSIS AND TREATMENT. By ROBERT W. TAYLOR, A. M., M. D. Parts I and II. Venereal Diseases. Philadelphia: Lea Brothers & Company. 1888.

If the demand for this atlas is commensurate with the need for it among the profession it will be large indeed. It will be of no small value even to specialists, and to those physicians educated at the many medical colleges of this country which are so conspicuously lacking in both clinical material and teaching, it will prove a veritable boon. The text is admirable in every way, and the presswork and general appearance are excellent. Of course, in all books of this class the carping critic finds fault with the colors in the lithographic plates. This inability to accurately reproduce the natural colors seems liable to prove a lasting stumbling-block to the lithographer's art. In this particular atlas, however, the coloring is fully up to the average, and the selection of subjects has been made with admirable judgment, the aim of the editor being to present clear types rather than exceptional cases.

The work is to be completed in eight folio parts, measuring 14 x 18 inches, embracing fifty-eight colored plates, numerous figures and engravings, and about 400 pages of text.

MANUAL FOR HOSPITAL NURSES, AND OTHERS ENGAGED IN CARING FOR THE SICK. By EDWARD J. DOMVILLE, L. R. C. P. Lond., etc., etc. With Recipes for Sick-Room Cookery. Sixth edition. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener. 1888. Pp. iv and 100.

This manual contains much information of immediate use to those engaged in the care of sick, and will be found a great convenience to the pupil-nurses in the various training-schools for nurses. It takes a comprehensive view of the subject, and presents the dignity, as well as the responsibility, of the position of a nurse. In civilized communities persons are no longer engaged as "nurses" because they are too ignorant, or lazy, or indifferent to do anything else than engage in so-called nursing. It has now become a profession—as useful, and, in many respects, as honorable, as the medical profession, and only by the proper co-operation of the two can the best results be obtained.

The instructions given in the manual cover the whole field of the duties of the faithful nurse, and cannot fail to benefit all who will study them intelligently. The work can be commended, unqualifiedly.

ANÆSTHETICS; THEIR USES AND ADMINISTRATION. By DUDLEY WILMOT BUXTON, M. D., B. S., Member of the Royal College of Physicians, etc., etc. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener. Pp. xii and 164. 1888.

One aim of this little manual is to direct attention to the fact that anæsthetics are administered too often by inexperienced and incompetent persons —those who do not realize the responsibility which attaches to their administration.

The work is divided into twelve chapters, the first of them being devoted to the history of anæsthesia and anæsthetics. Then the subject of the preparation of the patient for an anæsthetic, and the choice of the one to be used, bearing in mind the age and condition of the patient, pathological condition, idiosyncrasy, etc., etc., the different gen-

eral anæsthetics, and their combination. Inhalers, accidents and their treatment, local anæsthetics, the medico-legal aspects of the administration of anæsthetics, etc., etc., are considered. The work presents the subject from a very practical standpoint. It contains much useful information, which is presented in a condensed form. It is interesting reading, and observance of the suggestions made will do much to guard against avoidable accidents, which occur too frequently.

INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, U. S. ARMY. Volume IX.

The ninth volume of the valuable index catalogue has just been issued, and begins with "Medicine (Popular)" and ends with "Nywelt." It has been prepared with the same care, and issued in the same form as its predecessors, that are so well known to the profession, and which are so creditable to the medical department of the army, and to the Government whose liberality provides for the issue of the catalogue.

THEINE IN THE TREATMENT OF NEURALGIA. Being a Physiological Contribution to the Therapeutics of Pain. By THOMAS J. MAYS, M. D. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener. Pp. 84. 1888.

This is a reprint from the *Polyclinic*, and is issued in the form of a small manual, consisting of four chapters, an appendix, and an index.

The first chapter gives a history of the tea-plant, and the discovery of the alkaloid theine (in 1827) found therein, as well as a description of the alkaloid.

The second chapter describes the physiological action of theine.

The third chapter gives the special therapeutic indications for the use of theine.

The fourth chapter is devoted to the consideration of forty-eight cases of neuralgia, in its varying forms, in which theine was used, and presumably with marked benefit. It might not have been amiss to have added another chapter and given the other side of the picture—the evil results of excessive use of infusion of the tea-plant, including this alkaloid.

PTOMAINES AND LEUCOMAINES, OR THE PUTREFACTIVE AND PHYSIOLOGICAL ALKALOIDS. By VICTOR C. VAUGHAN, Ph. D., M. D., and FREDERICK G. NOVY, M. S. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

This is a book which deserves special attention. It is the first attempt which has been made to present in book form the literature of the ptomaines and leucomaines, and the authors have succeeded in putting in succinct form the pith of the various contributions on the subjects. The citation of the contributions is very valuable, and covers some twenty pages.

The book makes it evident that those who make any pretensions to the application of the general principles of chemistry, bacteriology, or physiology to the practice of medicine cannot afford to be ignorant of the general principles involved in the study of the ptomaines and leucomaines.

The following constitute the chapter headings: Definition and Historical Sketch of Ptomaines, The Relation of Ptomaines to Disease, The Importance of Ptomaines to the Toxicologist, Methods of Extracting Ptomaines, Chemistry of the Ptomaines, Chemistry of the Leucomaines, The Pathological Importance of the Leucomaines, Literature.

The authors are to be complimented for presenting to the profession a compendium of valuable information. Pp. 314. 1888.

MANUAL OF CHEMISTRY. By W. SIMON, Ph. D., M. D. Second edition. Thoroughly revised and greatly enlarged. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co. 1888.

This is a regular text-book on chemistry, intended for students in pharmacy and medicine. It is illustrated by colored plates to make more intelligible the various reactions in which color forms an important item. A series of questions are found at intervals through the book, so that the student may ascertain for himself how far he has appropriated the information imparted. The text is clear, and the general presentation of the book, as a whole, will compare well with other recent text-books on the same subject.

A TEXT-BOOK OF PHARMACOLOGY, THERAPEUTICS, AND MATERIA MEDICA. By T. LANDER BRUNTON, M. D., D. Sc., F. R. S. Adapted to the U. S. P. by FRANCIS H. WILLIAMS, M. D. Third edition. Philadelphia: Lea Bros. & Co. Chicago: A. C. McClurg & Co.

The general title, and the reputation of the author, will sufficiently indicate to the student the character of the book. As will be seen, it is the third edition, and the author has, as far as possible, made it conform to the ideas of modern investigation. The struggle for existence between the organism and the microbes which invade it, as presented by Metschnikoff is well illustrated. The absorption and elimination of ptomaines and leucomaines receive attention; in fact, the whole chapter on the action of drugs on protoplasm, blood, and low organisms, some fifty pages, will be found as complete as is practicable under the circumstances. The book is well printed, and creditable in every way. It will be found to be a convenient book for reference by physicians and pharmacists.

MISCELLANY.

MEDICAL NOTES.

A general meeting of the Tōkyō Igaku Kwai (Tōkyō Medical Society) was held on May 24, at 6 p. m., in the room of physiology, University of Tōkyō, when the following addresses were given:

Dr. Hisayasu Mita—Influence of fevers on nervous diseases.

Dr. Yoshito Inoko—Experience of the medical value of the oil of gynocardea odorata and pterocarpus flavus.

Dr. Seiki Ogata—Experiments in preserving meat with carbonic acid.

Sixth general meeting of the Japanese Private Sanitary Society was held May 26, at 1 p. m., in the great hall of the Engineering College, at which about 1,000 members and guests were assembled, including both men and women.

The Obstetric and Gynæcological Society's first meeting was held June 2, at 3 p. m., when the following speeches were made:

Dr. Kamejiro Ishii—How to determine months of pregnancy.

Dr. Gen-iku Miyaki—Condition of fœtus born in the period of six months and twenty days.

Dr. Hēnoshin Inoue—Cerebral anæmia caused by abortion.

Dr. Kenzo Kusuda—Medical discrimination between multiparæ.

Dr. Ikujiro Sakurai—Artificial pregnancy.

Dr. Dekisuke Hanaoka brought a woman of 41 years old for diagnosis.

A meeting of the Society for Investigation of State Medicine was opened May 25, at 5.30 p. m., when the following speeches were made:

Dr. Kentaro Murata—How to cure syphilis.

Dr. Sakae Furukawa—Propagation of the people.

Promotion to rank and appointment to office—On 22d of May, Sankei Hagiwara was appointed to be physician to H. I. M. the Emperor.

On 29th, 2d class of merit, Kyokujitsu Jūkōshō, was conferred on Kensai Ikeda, Hakase, Physician to H. I. M. the Emperor and Director General of the Army, and Hōsei Ito, Physician to H. I. M. the Emperor.

On 7th, Degree of Hakase was conferred on each of the following persons: Wami Taguchi, Seiki Ogata, Masakichi Sasaki, Ryōsei Koganei, faculties of medicine, University of Tōkyō and Susumu Satō.

Examination for the Practice of Medicine at Tōkyō—The whole number of applicants was 1,989, of which 1,322 were examined and 667 were not examined, on account of sickness or other circumstances; of these, 593 passed successfully and the rest failed. Applicants for dentistry were seventeen, of whom five were successful and twelve failed.

Examinations for the same at Kyōtō—The whole number of applicants was 622, of whom 338 were examined and 284 not examined, on account of sickness or other circumstances, and 84 were successful; the rest failed.

Dismissal of Chinese Physicians from the charge of the Prince Haru-no-miya—As the treatment of Chinese physicians is generally mild, it is still thought by some Japanese, especially by old men and women, that children should be treated by them. Whether from this idea or not, the Prince Haru-no-miya has been heretofore under the care of the Chinese physicians Sōhaku Asada and Teiken Fukui. But recently they were dismissed, and now the prince is under the care of Kensai Ikeda, Physician to H. I. M. the Emperor.—*The Sei-i-kwai Medical Journal*, Tōkyō, Japan.

TRIBROMPHENOL AS AN ANTISEPTIC.—Grimm claims considerable antiseptic value for tribromphenol, which is separated by the action of bromine on carbolic water solutions in the form of soft, white crystals, fusible at 95 Cent. Tribromphenol, accord-

ing to Grimm, does not irritate the mucous membrane of the mouth, pharynx, or nose; nor does it effect the skin, even near wounds. When the powder is sprinkled on recent wounds more or less violent burning ensues, and the wound surfaces are slightly cauterized, and become necrotic superficially. It severely irritates granulating wounds, and slight hæmorrhages sometimes occur. Atonic pale granulations are very quickly excited to reparative action by the drug. It acts as an energetic disinfectant on ulcers and gangrenous processes, and is, therefore, recommended for impregnating (2 to 3 per cent.) bandages, for antiseptic salves, preparations of bacilli, etc. It was found that a 1 per cent. ammoniacal solution destroyed the bacteria in putrefying liquids within thirty minutes. Trials of it with gauze saturated with various fermentable substances gave excellent results as showing its value as an antiferment and antiseptic.—*Deutsche Med. Zeitung*, No. 52, 1888.

Hypodermic Injections of Antipyrin.—Derlon claims that aqua lauro-cerasi is an excellent vehicle for a hypodermic injection of antipyrin, since it lessens the pain of the injection, though it adds to the pain of morphine solutions. Derlon uses the following formula :

Antipyrin ..... 30 grains.
Hydrochlor. of Cocaine..... 1 "
Aqua lauro-cerasi..... 1 drachm.

Revue Gen. de Clin. et de Therap., July 12, 1888.

Use of Antipyrin with Quinine.—Derlon says that if antipyrin is added to the prescription containing quinine in cases in which large doses of quinine are necessary (as much as 15 grains, or more), the unpleasant effects of the quinine are obviated. He adds 3 grains of antipyrin to each 5 grains of quinine. This, he says, also increases the antipyretic effect of the quinine, and prevents quinism. The mixture is better tolerated by the stomach than the quinine alone.—*Revue Gen. de Clin. et de Therap.*, July 15, 1888.

Formula for Bronchitis.—Céhron's formula is as follows :

R.

Terpine ..... 5 grammes.
Glycerine.....
Rectified spirits of wine..
Sirup of honey, aa.....70 grammes.
Vanilline .....2 centig.

S. Two tablespoonfuls daily.

Each teaspoonful contains 50 centig. (grs. 10) of terpine.

University Medical Magazine.—The first number of this *magazine*, edited under the auspices of the alumni and faculty of medicine of the University of Pennsylvania, has been issued, and in good style.

On the cover is a portrait of John Morgan, the founder of the medical faculty of the University of Pennsylvania. Also the names of the editorial staff, consisting of an advisory and an editorial committee. The table of contents embraces "Original Articles, Memoranda, Laboratory Notes, Department Notes, Editorial, Society Proceedings, Book Notices, Miscellaneous." The publisher is A. L. Hummel.

ANNOUNCEMENTS.

The sixteenth annual meeting of the American Public Health Association, will be held in Milwaukee, Wisconsin, Tuesday, Wednesday, Thursday, and Friday, November 20, 21, 22, 23, 1888.

The next annual meeting of the American Academy of Medicine, will be held in New York, on November 13 and 14, 1888.